

Parc Solar Caenewydd, Swansea

Phase 1 Geoenvironmental Report and Coal Mining Risk Assessment

Development of National Significance in the Renewable Energy Sector
Application Submission





Phase 1 Geoenvironmental Report and Coal Mining Risk Assessment




Gowerton

Land fronting the A484 and Swansea Road (B4560)
at Gowerton, Swansea SA4 4LE

on Behalf of

Taiyo Power Storage Limited

Quality Management

| | | |
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1 Introduction

1.1 Introduction

This Phase I Geoenvironmental & Coal Mining Risk Assessment Report has been prepared by Hydrogeo Limited on behalf of Taiyo Power & Storage Limited (herein referred to as “the applicant”) and forms part of a suite of documents supporting a planning application for Development of National Significance for the construction, operation, management and subsequent decommissioning of a co-located solar farm and battery storage facility on land fronting the A484 and Swansea Road (B4560) at Gowerton, Swansea (“the application site”). The proposed development will deliver a host of landscape, biodiversity, soil and hydrological enhancements, including measures to strengthen habitat connectivity through this part of the valley, the creation of green buffer zones and public right of ways improvements. The proposed development is called ‘Parc Solar Caenewydd’.

The combined Phase I Geoenvironmental Desk-Based Study and Coal Mining Risk Assessment has now been updated following amendments to the proposed site layout, initial pre-application consultation from the relevant consultees (The Coal Authority, Natural Resources Wales, and Swansea City Council) and re-consultation in October / November 2023. This assessment considers the ground conditions present across the Site as a result of the coal mining legacy of the area, as well as the potential for any risk posed to identified sensitive receptors from potential contaminants across the Site, with this document supporting the application submission.

1.2 Report Objectives

The objectives of this study are to review site history, land use, available pre-existing information, data and reports of the Site. This information will aim to identify any potential environmental or human health risks associated with the development of the Site.

As the Site is within a Coal Authority defined Development High Risk Area, a Coal Mining Risk Assessment has also been undertaken as part of this report. A review of the proposed development layout in relation to known mine entries has also been undertaken.

The study will serve as a preliminary assessment of any potential environmental and contaminated land issues that will need to be considered during the development of the Site in line with the Welsh Planning Policy, Edition 11 (PPW 11 February 2021).

1.3 Summary of Consultee Responses, Including Re-consultation Comments

Informal pre-application consultee comments have been received, with comments from the relevant consultees in relation to the initial draft of the Hydrogeo Phase I Geoenvironmental and Coal Mining Risk Assessment Report summarised below:

The Coal Authority - 2022

The Coal Authority correspondence details that the Coal Mining Risk Assessment has been informed by appropriate geological and mining information.

The Coal Authority are of the opinion that it would be sufficient to accompany any subsequent planning application to meet the requirements of Welsh Policy.

The Coal Authority recommendation is no objections, subject to the imposition of a planning condition to ensure the investigations and the completion of any necessary remedial/mitigatory measures.

The Coal Authority Re-Consultation

The Coal Authority provided re-consultation comments on the Hydrogeo Coal Mining Risk Assessment, with the applicant providing the comments to Hydrogeo for review in August 2023. The Coal Authority re-consultation comments are present in italics below:

We are pleased to see that the development layout appears to have been informed by the location of mine entries within the site and that further investigatory works are proposed to establish and inform any remedial work necessary to address risks posed by coal mining features.

The coal mining information reviewed (Phase 1 Geoenvironmental report and Coal Mining Risk Assessment) should be provided to support any formal submission for this project. Please do not hesitate to contact me if you would like to discuss this matter further.

Natural Resources Wales (NRW) - 2022

Following a review of the initial draft Phase I Geo-Environmental Desk Based Study Report during a pre-application advice request, NRW provided comment in regard to the report.

NRW indicate that a robust Construction Environment Management Plan (CEMP) should be implemented to protect the protected sites and the wider environment from pollution

during the construction phase. The CEMP shall then be implemented as approved during site preparation and construction phases of development.

NRW note that there is a significant potential for contaminated surface water to be generated, with dirty water run-off into the onsite streams.

NRW advised that due to the environmental risk level being low, this could be controlled via appropriately worded planning conditions on any permissions granted.

Natural Resources Wales (NRW) Re-Consultation -2023

Following the re-consultation process (2023), Natural Resources Wales (NRW) provided a number of comments to the applicant, the below comments in italic are the comments which are relevant to the works covered by the scope of this Hydrogeo report only.

Based on the information provided we accept that the historical land contamination risk is low and would as PEDW to include the following condition on any planning permission granted:

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with PEDW) shall be carried out until a remediation strategy detailing how this unsuspected contamination shall be dealt with has been submitted to and approved in writing by PEDW. The remediation strategy shall be carried out as approved.

Justification: To ensure the risks associated with previously unsuspected contamination at the site are dealt with through a remediation strategy, to minimise the risk to both future users of the land and neighbouring land, and to ensure that the development can be carried out safely without unacceptable risks.

1.4 Scope of Works

The scope of work for this study comprises:

- A review of available environmental and geological site reports, containing descriptions of past and current land use, with data sourced from Groundsure™;
- A review of historical Ordnance Survey maps;
- A review of current Geological and Hydrogeological Maps;
- A review of detailed site walkover photographs as supplied by the applicant;

- A preliminary site conceptual model and risk assessment;
- A review of Coal Authority and BGS data and a coal mining risk assessment;
- A summary of the above findings and the provision of recommendations for site development.

1.5 Information sources

The following sources of information have been used in the production of this report:

- Site photographic records provided by the applicant;
- British Geological Survey map Sheet 247 – Swansea, BGS, (2012);
- Geology of the Swansea District: A brief explanation of the geological map sheet 247 (2011);
- The geology of the South Wales Coalfield: being an account of the region comprised in sheet 247.
- British Geological Survey borehole logs;
- Groundsure EnviroInsight and GeoInsight data report;
- Groundsure MapInsight Historical Maps;
- Coal Authority Consultants Coal Mining Report, Reference: 51002744314001.
- Zetica UXO Risk Maps.
- Magnitude Surveys – Geophysical Survey Report – MSSS1328, January 2023.

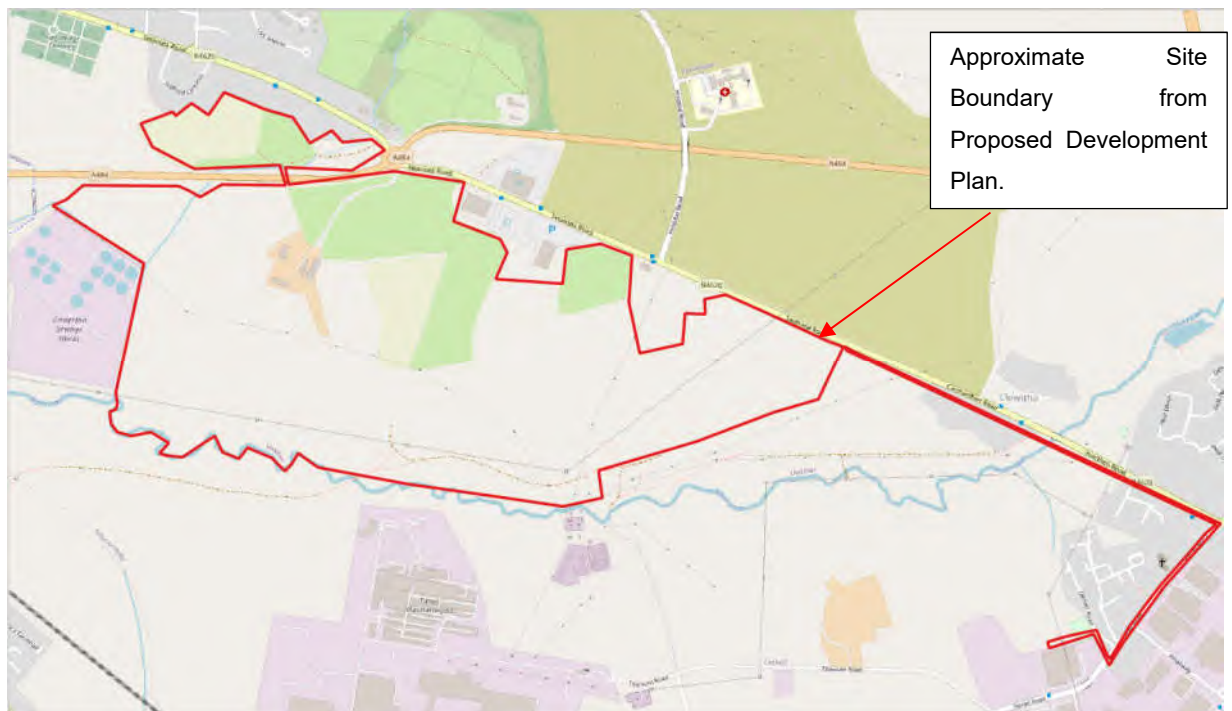
2 Site Geoenvironmental Setting

2.1 Site Location and Description

The Site is located off of the A484 and B4620 – Swansea Road. The National Grid Reference (NGR) for the centre of the Site is 260432, 196889, and the closest postcode to the Site is SA4 4LE. The surrounding land uses consists of a mix of residential, agricultural and industrial areas.

The location of the Site is presented in Figure 2-1, and is referred to as ‘the Site’ within the report.

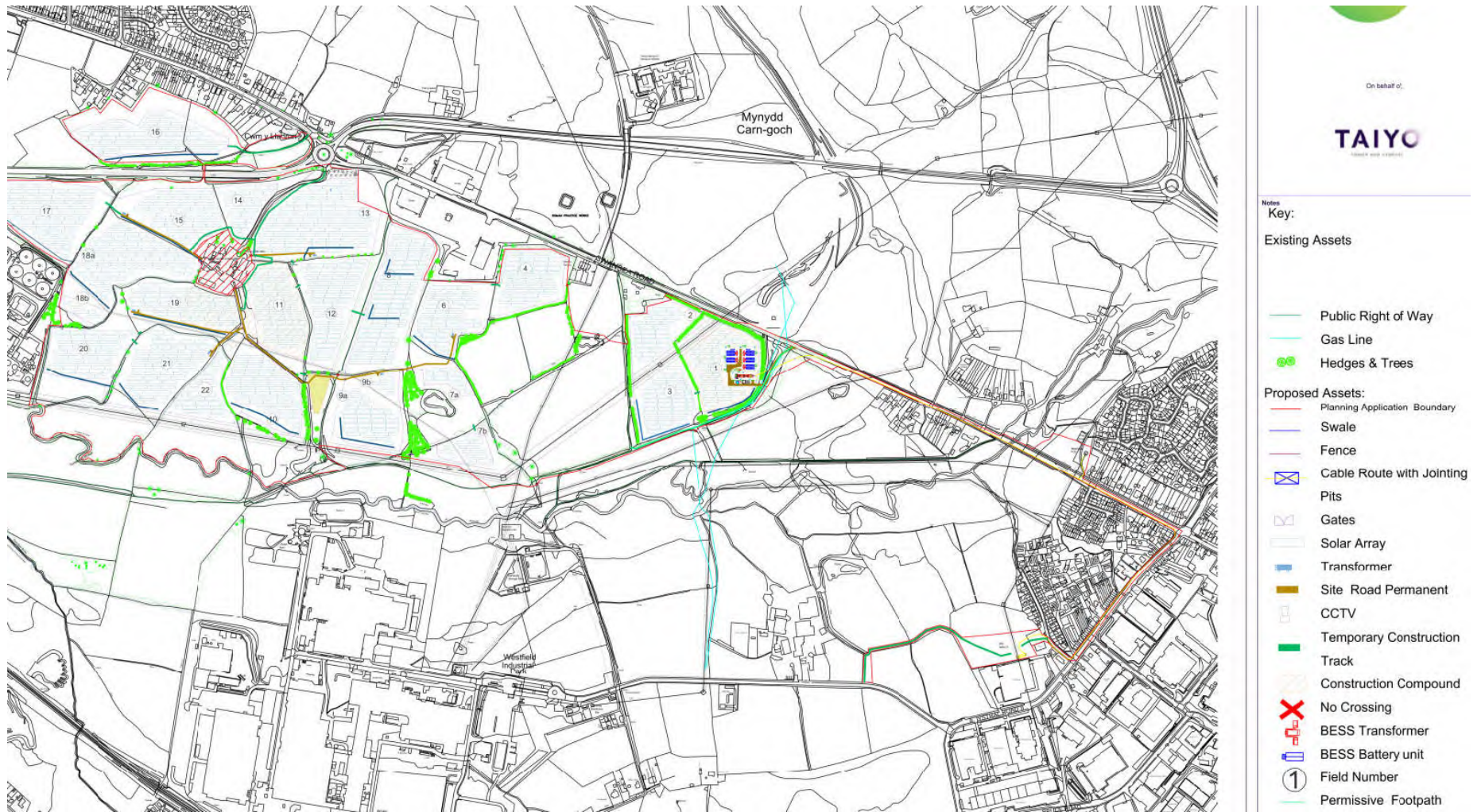
Figure 2-1 – Site Location, Crown copyright reserved, Licence No. 100047852



2.2 Proposed Development

The application proposal relates to the construction, operation, maintenance and decommissioning of a ground mounted solar power and battery energy storage facility. An operational lifespan of 40 years is sought after which the proposed development will be decommissioned, and the application site returned to full agricultural use.

Figure 2-2 Proposed Development Plan



2.3 Topography

A topographical survey of the Site has been undertaken and shows levels vary across the Site with levels to the north-east at 41.18mAOD falling to levels of 8.67mAOD to the south-west.

Topographic levels do reach approximately 45mAOD within the upper (northern) fields between the roundabout and Days Garage.

2.4 Current Site Condition

The Site currently consists of a number of individual, undeveloped open fields. The Site is bordered by Gowerton Sewage Treatment Works to the west, agricultural land to the east, a business park, and the B4560 and A484 roads to the north.

The roads also separate the Site area, with a smaller area of undeveloped land located to the north and just south of residential dwellings along the B4620.

Photos supplied to Hydrogeo by the applicant indicate a number of access tracks, electricity pylons and associated overhead lines, drainage ditches and channels. A number of photographs supplied by the applicant to Hydrogeo have been included in Table 3-1 of this report.

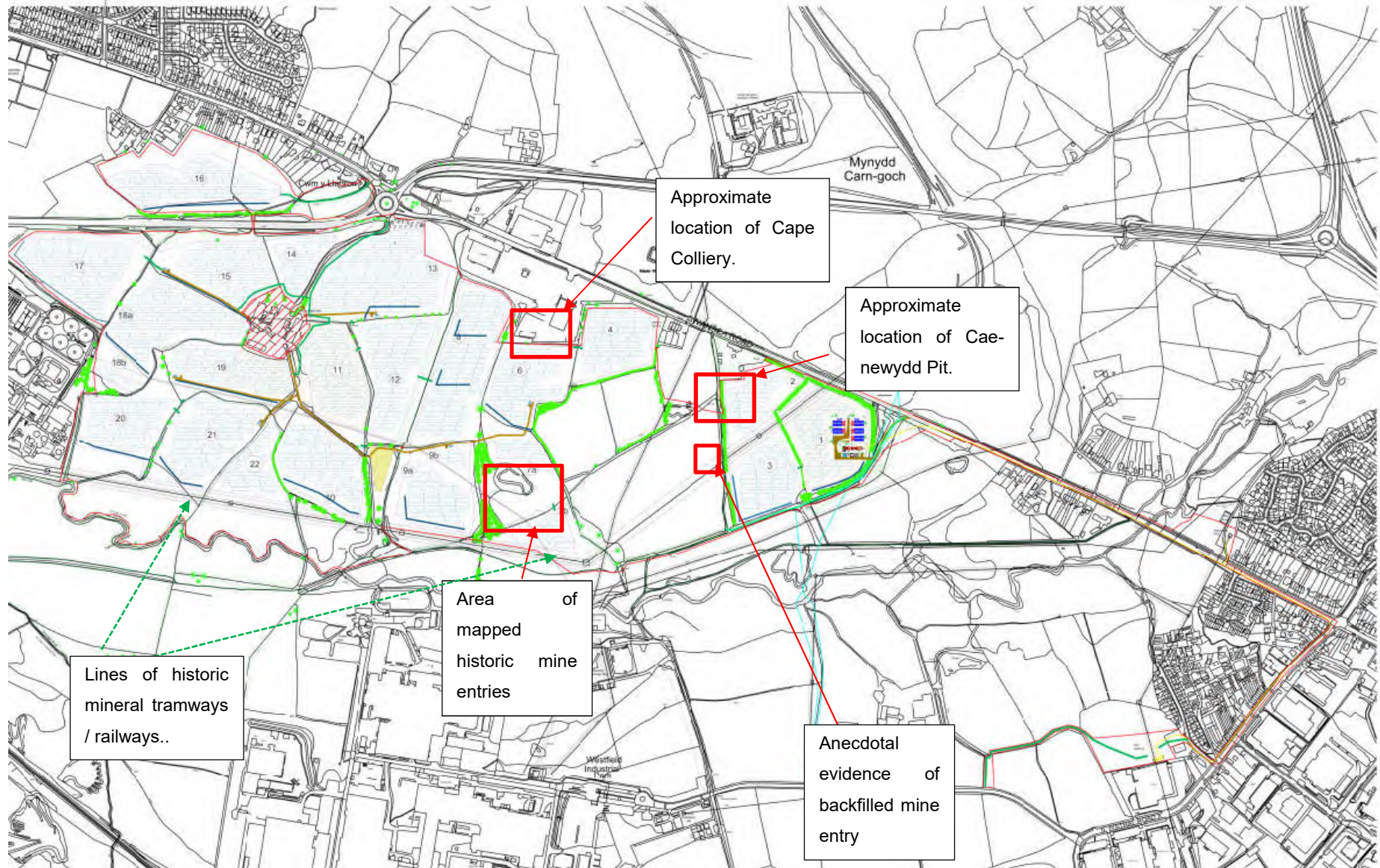
2.5 Historical Land Use

A summary of previous land uses for the Site and the immediate surrounding area has been determined using the historic Ordnance Survey maps, and additional maps provided by the applicant dated between 1838 and 2021, provided by Groundsure. The maps can be viewed in Appendix C of this report, with the findings summarised in Table 2-1.

Drawing 1 presents the Site and its individual numbered fields. It is advised that this drawing is viewed in conjunction with this historical land use section to aid location and land use understanding.

Figure 2-3 presents the Gowerton Field Numbers, with key historic land uses and features identified.

Figure 2-3 Field Numbers with Key Land Use Features Identified



From a review of the historic Ordnance Survey maps (Included as electronic Appendix C), as well as the available online sources as part of the National Library of Scotland Historic OS Maps, it is clear that all key land use and development / changes on Site are located within the central, southern and eastern site areas. The western site area (including fields west of 13, 12 and 9c) remains as undeveloped agricultural farmland throughout the mapping dates (1838 – 2021). Although, some changes are shown on the historic OS maps including land drains, draining the agricultural fields into the Afon Llan to the south. Therefore, Table 2-1 only details and addresses the land uses and changes to land occurring within and to the east of fields 13, 12 and 9c.

Table 2-1 – Summary of Historical Land Use

| Map Year (Scale) | Land Use on Site | Land Use in Vicinity of Site |
|--------------------------------------|---|---|
| 1838/29 Tithe map (Online Source) | Pen-y-Fodau Farm and associated fields. Penclawdd Canal intersects between fields 23 and 24. Note that these fields are no longer included within the proposed development layout. | Surrounding land use completely grassed lands. |
| 1878 (1:10560) | Cae-newydd Pit, associated engine house and shaft located in eastern Site area, between fields 2 & 5 as shown in Figure 2-3. Associated tramway runs from Cae-newydd Pit, west to join the London northwest Rail line. Well mapped to the west of the buildings associated with Pen-y-fodau-fawr farm Canal trending east-west across area adjacent to mineral railway / tramway. Canal connects to Afon Llan immediately west of the Site boundary. | Garn-goch Pit and associated infrastructure located immediately north-east of the Site boundary Disused colliery mapped approximately 50m south of the Site. South of Site area marked as field 3. Area south west of the Site boundary already heavily developed industrially with mapping indicating disused steel works, chemical works, brick fields and rail developments. Areas east of the Site boundary are less industrialised, with majority of land remaining agricultural. Gwalia colliery and old coal pit within 100m of the Site. |
| 1897 (1:10560) | Cae-newydd Pit no longer mapped, but tramway and rectangular building structures remain. | Coal pit and air shaft mapped Immediately north / north east of fields 6 & 8. Continued expansion and development of Garn-goch colliery. |
| 1889 (1:10560) | Old shaft and old coal pit, with surface workings located at land between fields 6 and 7a-b. Cape colliery connected to existing mineral railway by a tramway. Junction of the lines located south of fields 9a-c. | Coal Pit and air shaft no longer mapped to the north / northeast of fields 6 & 8. Cape Colliery and associated buildings mapped immediately north of field 8 and east of field 13. |
| 1900 (1:10560) | No significant changes to Site use to note. | Number of clay pits and brick fields still mapped, as well as an iron foundry to the southwest of the Site. No other significant land use changes. |

| Map Year (Scale) | Land Use on Site | Land Use in Vicinity of Site |
|------------------|---|---|
| 1905 (1:10560) | No significant changes to Site use to note. | No significant land use changes to note. |
| 1913 (1:10560) | Canal appears to be mapped as marshy ground conditions, indicating the potential infilling of the canal. | No significant land use changes to note. |
| 1921 (1:10560) | Well associated with Pen-y-fodau-fawr farm no longer mapped. | No significant land use changes to note. |
| 1938 (1:10560) | Former tramway connecting Cape Colliery now indicated as a footpath. Old drift and associated surface workings indicated along southern site boundary, south of fields 9a-c, southeast of field 10. Well associated with Pen-y-fodau-fawr farm no longer mapped. | Cape Colliery no longer mapped immediately north of the Site Sewage works constructed immediately west of the Site boundary. Area to southwest of the Site continued to be dominated by industrial land uses. |
| 1948 (1:10560) | No significant changes to Site use to note. | By mapping in 1948, only steel and tin plate works still mapped as present to southwest of the Site. No areas of clay or brick fields. Continued residential development of the surrounding area. |
| 1964 (1:10560) | A number of drains and footpaths now mapped on site. Footpaths mapped in former areas of tramways indicating the complete dismantling. Mineral railway running west across southern site boundary still mapped as present. Number of land drains mapped as draining agricultural fields in the western site area. Particularly fields 110, 11, 18a, 18b, 19 20, 21 and 22a. | Garn-goch Colliery now mapped as disused, alongside the associated railway / tramway lines. |
| 1968 (1:10560) | No significant land use changes to note. | Main railway line trending north – south now mapped as dismantled. |
| 1974 (1:10,000) | No significant changes to Site use to note. | Land to southwest now dominated by residential development, with an unlisted works structure remaining. |
| 1980 (1:10,000) | Mineral railway along southern site boundary no longer mapped and presumed to have been dismantled sometime 1964 - 1980. | No significant land use changes to note. |
| 1988 (1:10,000) | No significant changes to Site use to note. | No significant land use changes to note. |
| 1994 (1:10,000) | Site appears roughly as is present today. | No significant land use changes to note. |
| 2001 (1:10,000) | No significant land use changes to note. | Surrounding land use appears similar to present day, with land use mostly consisting of residential. |
| 2010 (1:10,000) | No significant land use changes to note. | Surrounding land use appears similar to present day, with land use mostly consisting of residential |
| 2021 (1:10,000) | No significant land use changes to note. | No significant changes to note. |

2.6 Site Geology

The 1:50,000 British Geological Survey (BGS) Sheet Map for the area (Swansea – Sheet 247) alongside the BGS OnShore GeoIndex viewer and the Geology of the Swansea district: a brief explanation of the geological map Sheet 247 Swansea have been reviewed in order to assess the geological conditions of the Site and surrounding land.

Additionally, a review of BGS borehole logs has been undertaken to prove the sub-surface geology.

Artificial Ground

Artificial ground consists of areas where the surface geology has been significantly modified by man, through extraction or infilling of the natural geology.

Superficial Deposits

Superficial deposits consist of loose deposits of geological materials which have not yet formed into competent rocks.

The Site is underlain Devensian Till and Alluvium superficial deposits.

The BGS describe Devensian Till deposits as “unsorted and unstratified drift, generally over consolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. Consisting of a heterogeneous mixture of clay, sand, gravel and boulders varying widely in size and shape (diamicton)”.

The BGS describe Alluvium deposits as “the general term for clay, silt, sand and gravel. It is unconsolidated detrital material deposited by a river, stream or other body of running water as a sorted or semi-sorted sediment in the bed of the stream or on its floodplain or delta”.

Bedrock Geology

The BGS data indicates that the Site is underlain by the Grovesend Formation, comprising mudstone, siltstone and sandstones.

The BGS describe the Grovesend Formation as “predominantly argillaceous, comprising mudstones and siltstones, with well-developed coals; minor lithic (Pennant) sandstones; locally developed red mudstones in the area”.

Geological Structure

The Site occupies an area surrounding a number of faults, namely the Bryngwyn Fault and the Tirdonkin Fault. Other smaller faults are mapped in the area but are unnamed. The Site is located on the Gowerton Synclinal Axis.

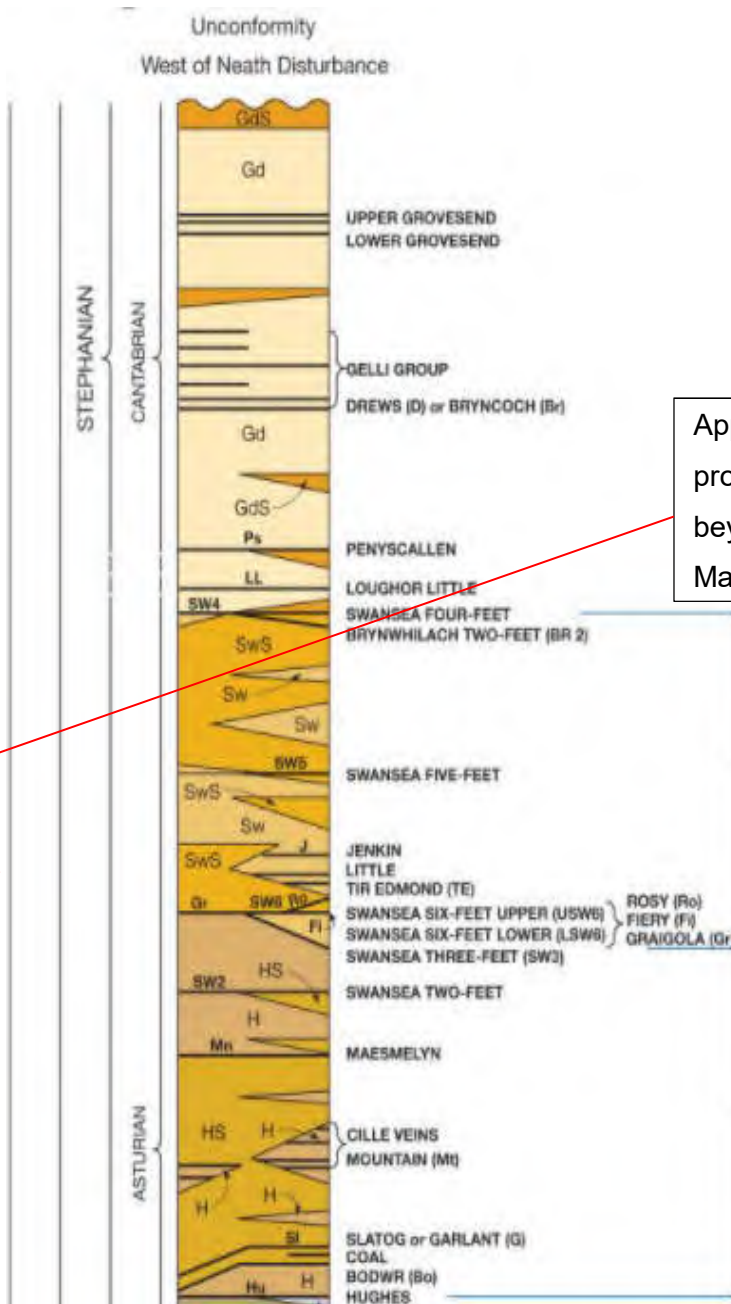
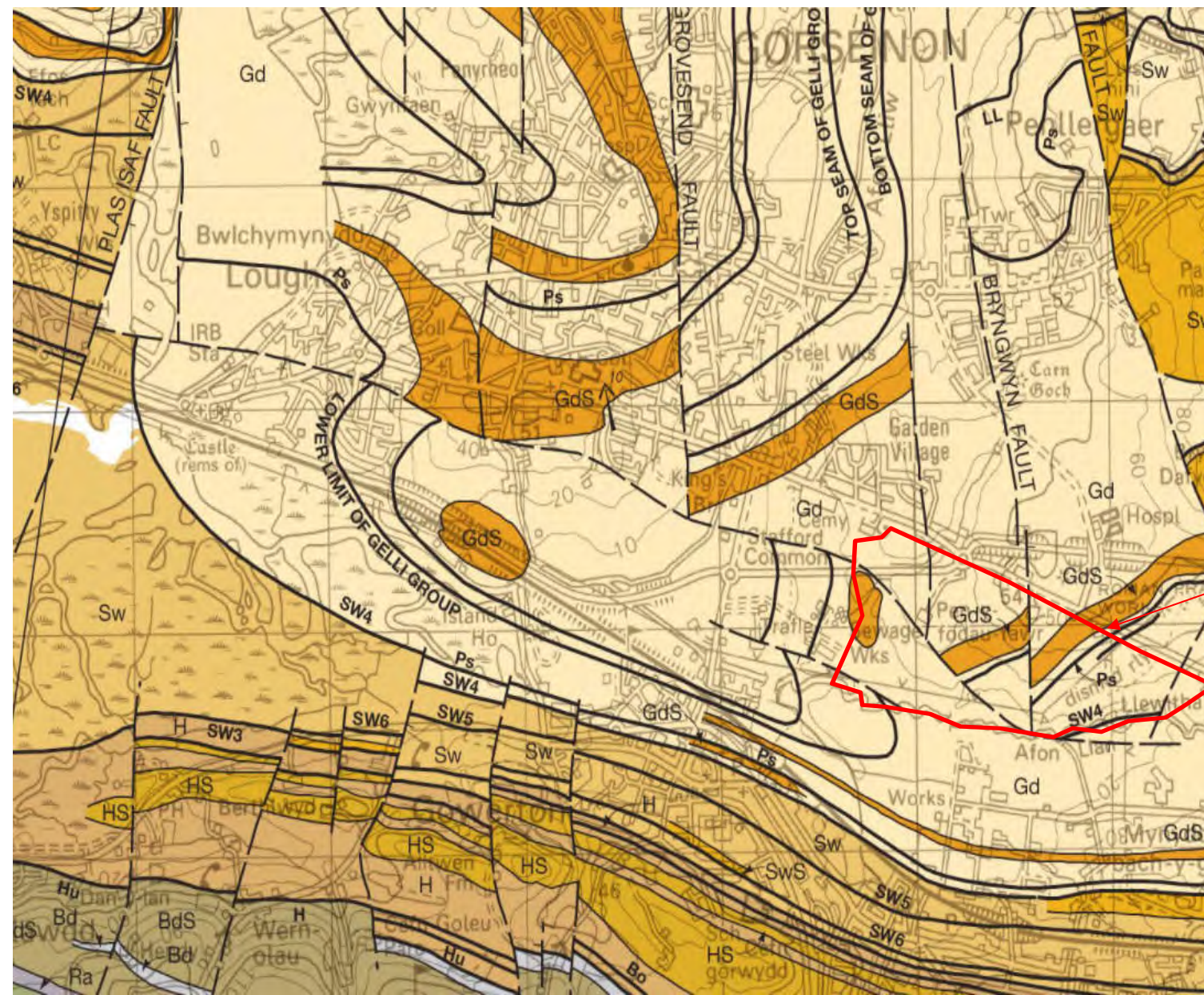
Coal Seams

Two named coal seams, the Swansea Four-Foot, and the Penyscallen Coal Seam both outcrop within the Site Boundary. These seams are addressed further within the Coal Mining Risk Assessment section of this report (Section 4).

Borehole records

A number of BGS borehole records are located within the Site boundaries, these relate to coal mining activities associated with Oaklands O/C Site and Cape Colliery. Numerous other borehole records are present beyond the Site boundary, mostly associated with Garngoch Colliery and the development of the Llanelli Link Road (A484).

The borehole logs associated with the 2no. on-site boreholes are unavailable.



Approximate Site Boundary (Note proposed cable route extends east beyond the coverage of the BGS Sheet Map.)

KEY

- Geological boundary, Bedrock
- Coal
- - - Marine band
- L - L - Lingula band
- ▲— Thrust fault, barbs on hanging wall side
- ┴— Fault, crossmark on downthrow side
- ┴— Fault with mineral vein; Pb Lead; Fe Iron
- Vertical strata
- Horizontal strata
- Inclined strata, dip in degrees
- Inclined strata, overturned, dip in degrees
- * Fossil locality

Figure 2-4 Geological Map of Local Area, BGS Sheet 247 - Swansea, Solid, British Geological Survey. Crown Copyright NERC. All rights reserved.

2.7 Ground Stability Hazards

Natural Ground subsidence data has been sourced from the Groundsure Report. The data is compiled by the BGS and classifies six separate natural ground subsidence hazards derived from the BGS digital Geological map of Great Britain at 1:50,000 scale. The Natural Ground Subsidence Hazard data assesses potential ground stability issues related to natural geological conditions only and does not cover any man-made hazards, such as contaminated land, or mining. The only exception to this is the Compressible Ground hazard layer, which does consider man-made ground e.g. landfill. The report can be viewed in Section 17 of Appendix B.

The potential for ground stability hazards based on natural subsidence data is detailed and discussed in Table 2-2.

Table 2-2 - Ground Stability Hazards

| Hazard | Rating | Details |
|---------------------|------------|---|
| Shrink Swell Clay | Negligible | Ground conditions predominantly non plastic. |
| | Very Low | Ground conditions predominantly low plasticity |
| Landslides | Very Low | Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the Site should always be considered. |
| | Low | Slope instability problems may be present or anticipated. Site Investigation should consider specifically the slope stability of the Site. |
| Soluble Rocks | Negligible | Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present. |
| Compressible Ground | Negligible | Compressible strata are not thought to occur. |
| | Moderate | Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the Site. |
| Collapsible Rocks | Very Low | Deposits with potential to collapse when loaded and saturated are unlikely to be present. |
| | Negligible | Deposits with potential to collapse when loaded and saturated are believed not to be present. |
| Running Sand | Negligible | Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on land use due to running conditions. |
| | Very Low | Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless the water table rises rapidly. |
| | Low | Running sand conditions may be present. Constraints may apply to land uses involving excavations and the removal of water. |

2.8 Radon

The Groundsure report indicates that the Site covers 2no. Radon risk areas as shown within the Groundsure report included as Appendix A of this report.

The radon assessment within the Groundsure Report indicates that there are 2no. on-site areas which appear to be radon potential risk areas (between 3% and 5%), including the north-western site area, beyond the A484, and the northern site area which surrounds the existing Days Motor Rental Site. The majority of the remaining site area is not mapped as within a Radon Affected Area.

It is important to note that there are no proposed buildings or confined spaces proposed for construction in these identified radon potential areas. The only proposed site building is located in the eastern portion of the site, which is mapped as an area where less than 1% of buildings / properties would be affected. The UK Health Security Agency (UKHSA), previous Public Health England (PHE) indicate that for these areas there are no additional radon mitigation measures required (See Table included within the Groundsure Report at Appendix A).

2.9 Mining

The Groundsure Report has indicated the Site is located within a coal mining area.

The Groundsure report did not identify any records pertaining to the following mining categories:

- Tin mining onsite;
- Clay mining onsite;
- Gypsum areas on site
- Brine areas on site;
- JPB mining areas on site;
- Mining cavities within 1000m;
- Non-coal mining within 1000m;
- Historical Mineral Planning Areas within 500m;
- Natural cavities within 500m.

Surface Ground Workings

The Groundsure report has identified 240 no. surface ground workings within 250m of the Site, 34 of which occur on Site.

The surface ground workings on site relate to the following activities:

- Collieries
- Cuttings
- Unspecified heap and refuse heaps,
- Disused drifts
- Coal and unspecified pits

Underground Workings

The Groundsure report has identified 80no. underground workings within 1000m of the Site, 3no. of these records are located on Site. All mining-related records can be viewed within the GroundSure report under Section 18, page 178. The details of the onsite records are as follows:

- Old Coal Pit – mapped 1913 at 1:10560 scale.
- Unspecified disused drift – mapped 1964 at 1:10560 scale.
- Unspecified disused drift – mapped 1968 at 1:10560 scale.

Britpits

The Groundsure report indicates that there are 10no. Britpits within 500m of the Site. 2no. of these records are located within the Site. Both records pertain to Cape Colliery.

Further details relating to the mining legacy of the Site are presented in Section 3 of this report.

2.10 Landfilling and Waste Sites

There are no records identified within the Groundsure report pertaining to the following landfill and waste categories:

- BGS historical landfill records within 500m;
- Historical waste sites within 500m.

Landfill

There is no record of landfill active or recent landfill within the Site boundary. There are 3no. records of active or recent landfill sites within 500m all pertain to a single operator, the details of which are as follows:

- 41m – 219m southeast Timet UK Ltd Titanium plant – accepting industrial waste.

Historical Landfill Sites (LA/mapping records)

The Local Authority and mapping records indicate 5no. historical landfill sites within 500m of the Site. The details of the closest 3 are detailed below:

- 215m South – refuse tip – 1971 mapping
- 219m south – refuse tip – 1965 mapping
- 316m south – refuse tip- 1965 mapping.

Historical Landfill Sites (EA/NRW records)

The EA / NRW indicates 3no. historical landfill sites within 500m of the Site. 2no. of the records pertain to a single waste site as detailed below:

- 134m south east – Alcoa Manufacturing GB Ltd, waste type: inert, industrial environmental permitting.
- 163m southeast – 223m southeast – IMI Titanium and Alcoa No.1, waste type: inert, industrial environmental permitting.

Licensed Waste Sites

EA / NRW records indicate that there are 16no. active or recently closed licensed waste sites within 500m of the Site. The details of the closest 3no. sites are highlighted below:

- 198m south – Timet Lagoon, size: approx. 75000 tonnes.
- 238m east – Timet Landfill, size: unknown, effective date: 08/08/1977
- 265m southeast – Alcoa Manufacturing GB Ltd, type of waste: Industrial waste landfill (factory curtilage), size: approx. 25000 tonnes.

Waste Exemptions

The Groundsure report has identified 21no. waste exemptions within 500m of the Site.

The details of the 3no. closest exemptions are detailed as follows:

- 78m north - 48 Swansea Road, using waste exemption – the use of waste in construction.
- 176m north – City & County of Swansea, using waste exemption, not on a farm, use of waste within construction.
- 194m northwest – Morgan Sindall Construction & Infrastructure Ltd, storing waste exemption, not on a farm, storage of waste in a secured place.

2.11 Hydrogeology

The Groundsure report has not identified any records pertaining to the following categories on Site:

- Soluble rock risk
- Local datasets of groundwater vulnerability.

Superficial Aquifer

The superficial Alluvium underlying the Site is classified by the Environment Agency as a Secondary A Aquifer, these are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

The superficial Glacial Till (Diamicton) underlying the Site is classified by the Environment Agency as a Secondary Undifferentiated Aquifer, these are assigned where it is not possible to attribute either category A or B to a geological unit. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the geology.

Bedrock Aquifer

The Site is underlain by the Grovesend Formation classified by the Environment Agency as a Secondary A Aquifer, these are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

The mine workings, adits and shafts may have permanently altered the Site hydrogeology by artificially draining the bedrock.

Groundwater Vulnerability

The Groundsure report has identified 11no. groundwater vulnerability classifications on Site which have been summarised as follows:

- Secondary Aquifer – low to medium vulnerability.
- Bedrock Aquifer – productive bedrock aquifer
- Leaching Class – low to high
- Infiltration value: 40% - 70%
- Dilution value: >550mm/year
- Overall vulnerability: low to medium.

2.12 Hydrology and Drainage

Watercourses

The Groundsure Report has identified 2no. named watercourses within 500m of the Site. These are the Afon Llan River and the Gors-Fawr Brook.

The Groundsure report has identified 140no. water network features within 500m of the Site, these include:

- Inland river not influenced by normal tidal action and lake, loch or reservoirs.

WFD Surface waterbody catchments

The Groundsure report indicates that the Site is located within the following Water Framework Directive Surface waterbody catchment:

- Afon Llan – headwaters to tidal limit, waterbody ID: GB110059032070. Catchment: Loughor, management catchment: Carmarthen Bay and the Gower.

WFD Surface waterbodies

The Groundsure report indicates 1no. record of a surface water body directive, the details of the directive are as follows:

- Afon Llan – headwaters to tidal limit. Waterbody ID: GB110059032070. Overall rating: Good. Chemical Rating: Good. Ecological Rating: Good. Year:2016.

WFD Groundwater bodies

The Groundsure report indicates that the Site is located within the Carmarthen Carboniferous Coal Measures groundwater directive. Waterbody ID: BG41002G200600. Overall rating: Poor. Chemical rating: Poor. Year: 2016.

2.13 Flooding and Flood Zones

A Flood Risk Assessment is being progressed under separate cover to the Hydrogeo Phase I and Coal Mining Risk Assessment and will be submitted to support the proposed development.

2.14 Abstractions and Source Protection Zones

The Groundsure report has not identified any records pertaining to the following abstraction and source protection zone categories:

- Groundwater abstractions within 2000m;
- Potable abstractions within 2000m;
- Source Protection Zones within 500m;
- Source Protection Zones for confined aquifers within 500m.

Licensed Surface Water Abstractions

The Groundsure report has identified 5no. surface water abstractions within 2000m of the Site. The details of the closest 3 are as follows:

- 110m south, historic – non-evaporative cooling at Alcoa Manufacturing GB Ltd. Annual volume (m³) 763728.
- 510m northwest, historical – make-up or top-up water at Bromham Leisure Ltd. Annual volume (m³): 22730.
- 877m northwest, historical – general use relating to British Steel Plc. Unknown volumes.

2.15 Environmental Designations

The following environmental designations were not identified within the Groundsure report:

- Marine conservation zones within 2000m;
- Forest parks within 2000m;
- Biosphere reserves within 2000m;
- Proposed Ramsar sites within 2000m;
- Possible special areas of conservation (pSAC) within 2000m;
- Potential special protection areas (pSPA) within 2000m;
- Nitrate sensitive areas within 2000m;
- Nitrate vulnerable zones within 2000m;
- SSSI impact risk zones on site;
- National nature reserves (NNR) within 2000m.

Sites of Special Scientific Interest (SSSI)

Groundsure has identified 3no. SSSIs within 200m of the Site. The details of the SSSIs are shown below:

- 1392m west – Burry inlet and Loughor Estuary
- 1679m northeast – Penplas Grasslands
- 1871m west - Burry inlet and Loughor Estuary

Conserved wetland sites (Ramsar sites)

The Groundsure report has identified the Burry inlet as a conserved wetland site. Burry inlet is a large estuarine complex located between the Gower Peninsula and Llanelli. It includes extensive areas of intertidal sand and mudflats, together with large sand dune systems at the mouth of the estuary.

Special Areas of Conservation (SAC)

Groundsure has identified Carmarthen Bay and Estuaries, 1392m west of the Site as a Special Area of Conservation.

Special Protection Areas (SPA)

Burry Inlet located approximately 1392m west of the Site is a Special Protection Area due to a number of species of interest.

Local Nature Reserves (LNR)

Groundsure has identified 2 no. Local Nature Reserves within 2000m of the Site, the details of both are as follows:

- 1297m east – Cadle Heath.
- 1764m southeast – Cwmllywd Wood

Designated Ancient Woodlands

There are 70no. records of ancient woodland within 2000m of the Site, 2 of which are located on Site, the records pertaining to the on-site woodlands are detailed below:

- Ancient semi-natural woodland;
- Restored ancient woodland site.

Special Landscape Areas (SLA)

Review of the DataMapWales Explorer has indicated the Site is located within a Special Landscape Area associated with the Garngoch and Lower Afon Llan Valley

Green Wedge

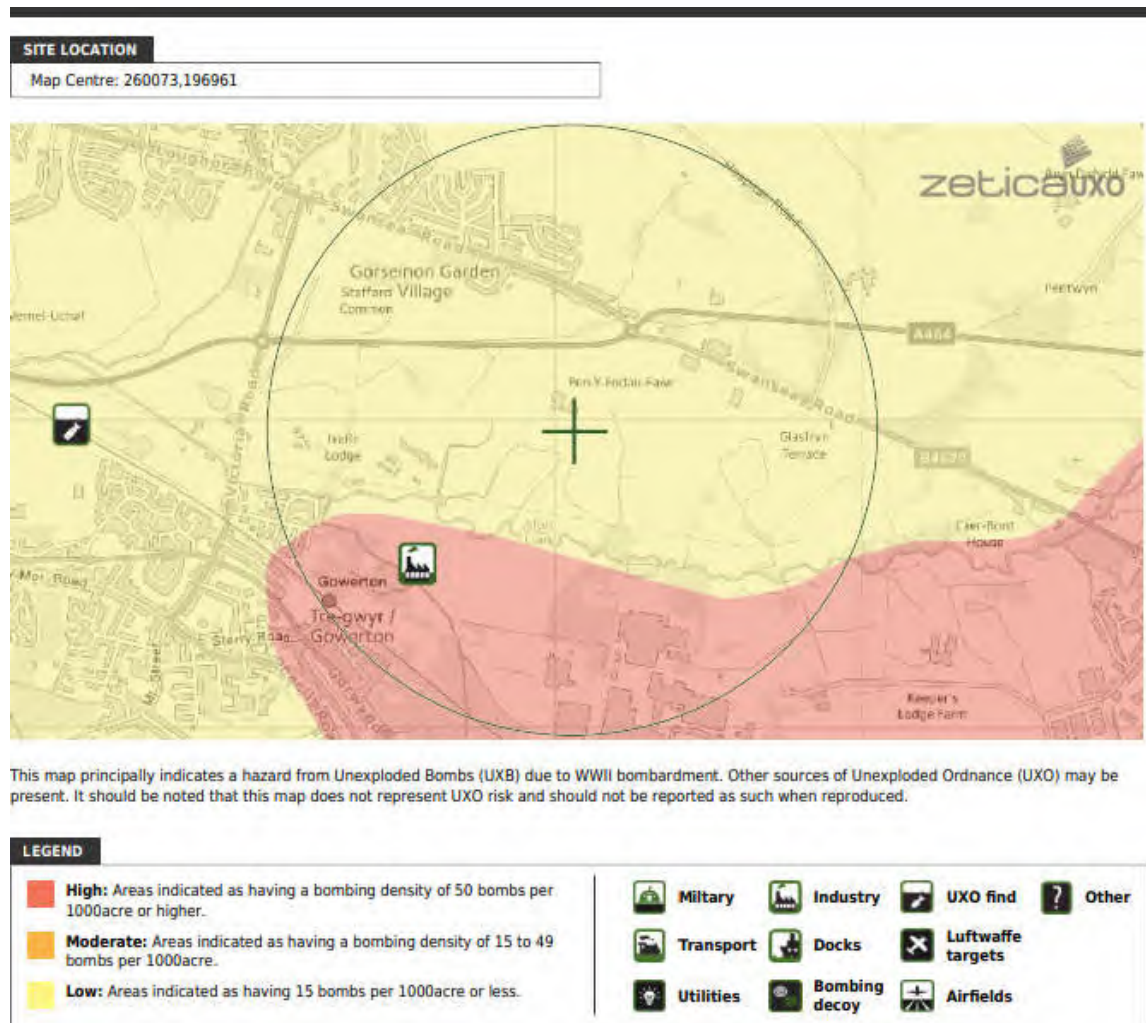
The Site is located within the Green Wedge, as designated by Swansea City Council, which is covered in the Swansea Local Development Plan.

2.16 Unexploded Ordnance (UXO)

Review of the Zetica Online UXO Risk Maps indicates that the site area is mapped within a bombing Low Risk Area. The map indicates the potential for UXO to be present as a result of World War Two (WWII) Bombing.

The risk boundaries are a guide, compiled from data based on political areas for which records are held. Zetica generally recommends a detailed UXO desk study and Risk Assessment is undertaken for sites mapped within moderate or high risk areas.

Figure 2-5 Zetica UXO Risk Map



2.17 Other Records in Relation to Potential Contamination

The Groundsure EnviroInsight report was reviewed, and relevant details of potential contaminant sources are detailed below in **Table 2-3**. The Groundsure report can be viewed in Appendix B.

Table 2-3 - Environmental Records


| Record / Source of Information | Details |
|--|---|
| Records of Part A(2) and Part B Activities and Enforcements | One record within 500m. 71m north of the Site. CEM Days Ltd. Process: Respraying of road vehicles. |
| Records of Licensed Discharge Consents | 21no. records, closest 21m north. Unspecified effluent to land. |
| Potentially Contaminated Sites | No other sites identified other than the farm, colliery and electrical features already identified from historical mapping. |
| Historical tanks | <p>76no. records. The closest is 2m west of the Site. This tank is associated with the sewage treatment works.</p> <p>The majority of tanks identified within the Groundsure report are located to the west of the Site, and are associated with the sewage treatment works which is off-site.</p> <p>A number of historical tanks have been identified from historic OS maps. The tanks are unspecified and located at distances >250m south and southeast of the Site.</p> |
| Pollution Incidents | <p>54no. records within 500m of site. 1no. record on Site. Incident date: 10/08/2015, Category 3 (minor) land impact.</p> <p>Location of on-site pollution event is mapped south of field 22b, alongside the Afon Llan.</p> <p>The majority of off-site pollution incidents are associated with the sewage works to the west of the Site, and the industrial unit to the south of the Site.</p> |
| Records of Category 3 or 4 Radioactive Substances | No records within 500m of the Site. |
| Petrol and Fuel Sites | None found within 500m of the Site. |
| Underground High Pressure Oil and Gas Pipelines and High Voltage Electric Cables | <p>None Found within 500m of the Site.</p> <p>Site walkover photos and anecdotal evidence indicates the presence of a high pressure gas main to the east of Field 1.</p> |

3 Site Walkover



Photos for the Site walkover were supplied by the applicant. Drawing 1 of this report shows the positions and viewpoints of the photos and should be viewed in conjunction with this site walkover section.




Photographs and notes of site conditions encountered are presented in Table 3-1. Upon inspection of the Site, the applicant did not identify any grossly contaminated grounds. However, based upon the historic site use, such contaminants may be identified in specific site areas.



Table 3-1 Site Walkover Photographs




| Photo Reference | Description | Photograph |
|-----------------|--|--|
| 1 | Looking southeast from the electricity pylon between fields 2 & 3. View across field 3 and toward south eastern site boundary. |  |
| 2 | Taken from south of field 2, looking north toward A454 to the rear of houses. |  |

| Photo Reference | Description | Photograph |
|-----------------|--|---|
| 3 | <p>Taken from within field 4 looking west toward Days Rental buildings. Area of former Cape Colliery Site.</p> |  |
| 4 | <p>Looking south within field 5 looking at a potential backfilled shaft (anecdotal evidence supplied to Hydrogeo). Stone-filled ditch anecdotally draining overflow water from within shaft.</p> |  |

| Photo Reference | Description | Photograph |
|-----------------|---|--|
| 5 | <p>Looking north within field 5 along stone filled trench which we are anecdotally advised drains the former mine shaft</p> |  |
| 6 | <p>Taken from northwest corner of field 5 looking south.</p> |  |

| Photo Reference | Description | Photograph |
|-----------------|--|--|
| 7 | Photo taken from within field 6, looking south. |  |
| 8 | Taken from within field 6, looking north towards field boundary. Photos shows field boundary lined with Japanese Knotweed. |  |
| 9 | Photo taken from within field 9c, looking south along access track. Visible areas of spoil heaps in background. |  |

| Photo Reference | Description | Photograph |
|-----------------|---|--|
| 10 | Photo taken from south of 9c, looking back north at water feature. |  |
| 11 | Looking west at exposed ground conditions on slope face. Change in levels is recognised. No noted exposed evidence of tipped or spoil materials associated with coal mining legacy. |  |

| Photo Reference | Description | Photograph |
|-----------------|---|--|
| 12 | Photo looking at stream between fields 15 & 17. Black silty sediment noted in the base of the drainage channel. |  |
| 13 | Taken from field 15 looking northwest across A454 main road toward field 16 with residential properties beyond. |  |
| 14 | Photo from field 19, looking northwest toward buildings associated with Pen-y-fodau-fawr Farm. |  |

4 Coal Mining Risk Assessment

In accordance with the Welsh Planning Policy, Edition 11 (PPW 11 February 2021), all sites located within Coal Authority Referral Areas subject to planning applications require a Coal Mining Risk Assessment (CMRA). The Site lies within a Coal Authority designated Coal Mining Consultation Area, and therefore a Coal Mining Risk Assessment is required to support the planning application.

Coal Mining Risk Assessments are prepared to identify coal mining features present and that these could pose to the development. The CMRA should also detail any investigatory works and remedial or mitigation measures.

This risk assessment has been written in general accordance with the Coal Mining Risk Assessment Model Report Template (Version 4, 2017), and intends to demonstrate to the Local Planning Authority (LPA) that the Site is, or can be, made safe and stable.

A Coal Authority Coal Mining Consultants Report (ref. 51002744314001) was purchased from The Coal Authority and was used in the production of this risk assessment. The report and accompanying map of Coal Authority data can be viewed in Appendix A.

4.1 Coal Authority Guidance for Developers

The Coal Authority's guidance document 'Risk Based Approach to Development Management, Guidance for Developers' notes that:

'The overall process aims to provide a consistent approach to assessing development proposals across the coalfields. It is recognised that flexibility and discretion is a necessary part of the planning system and as such there may be exemptions to the requirement for an applicant to submit a desk based Coal Mining Risk Assessment in support of a development proposal within the Development High Risk Area'

The exceptions list is noted to fall into two parts based on the type of application (e.g. householder development, heritage consent) and Nature Development (e.g. change of use, non-permanent works with no groundworks).

The explanation for Nature of Development exemptions note:

'There may also be exemptions made for the nature of development, where the building and/or engineering operations are minimal and therefore would not require the applicant to obtain a Coal Authority Permit for groundworks that intersect coal workings.'

It should be noted that one of the examples used for a Nature of Development exemption for a 'non-permanent works with no groundworks' is a solar array. The justification for this exemption is noted as 'no significant groundworks'.

Although it is likely this proposed development will include some groundworks, these are not thought to be excessive and will likely include shallow trenching for shallow cable burial.

4.2 Identification of Site-Specific Risks

Table 4-1 below summarises the potential risks associated with the coal mining legacy at the Site, identified from the initial desk-based review.

Table 4-1 – Potential Coal Mining Legacy Issues

| Coal Mining Legacy | Yes | No | Risk Assessment |
|--|-----|----|-----------------|
| Underground coal mining (recorded at shallow depths) | X | | Required |
| Underground coal mining (probable at shallow depths) | | X | Not Required |
| Mine entries (shafts and adits) | X | | Required |
| Coal mining geology (fissures) | X | | Required |
| Record of past mine gas emissions | | X | Not required |
| Recorded coal mining surface hazard | | X | Not required |
| Surface mining (opencast workings) | | X | Not Required |

For those coal mining issues identified as "yes" a more detailed discussion and assessment of the risks, both individually and cumulatively, to the Site and the proposed development is detailed within the following sections.

4.3 Coal Seams

The Coal Authority Consultants Coal Mining Report indicates 8no. records of coal seams that outcrop within the Site. The 8no. records relate to 3no. named coal seams and a single unnamed seam. The details are presented in Table 4-2.

Table 4-2 Coal Seam Outcrops

| Seam Name | Mineral | Workable | Bearing of Outcrop (degrees) |
|------------------------|---------|----------|------------------------------|
| Mynyddislwyn Big Rider | Coal | Yes | 20 |
| Mynyddislwyn Big Rider | Coal | Yes | 27 |
| Mynyddislwyn Big Rider | Coal | Yes | 99 |
| Mynyddislwyn Top Leaf | Coal | Yes | 58 |
| Mynyddislwyn Top Leaf | Coal | Yes | 65 |
| Pennyscallen | Coal | Yes | 59 |
| Pennyscallen | Coal | Yes | 60 |
| Unnamed | Coal | No | 22 |

Table 4-2 shows that 8no. coal seams outcrop within the Site boundaries. The positions of these outcrops are presented in the 'Summary of Findings Coal Authority Map' included as Appendix A of this report.

Review of available borehole logs on the BGS GeolIndex relating to the development of the Llanelli Link Road, to the north of the Site shows that the area is underlain by a maximum thickness of 7m of superficial Glacial Till. Therefore it is estimated, that the coal seams on-site sub-crop beneath a maximum Till thickness of 7m.

However, the Llanelli Link Road is located to the north of the Site on elevated ground, so the actual superficial geology thickness underlying the Site may vary.

Due to the dip direction of the geology in the area (northwest) and the outcrop positions of the coal seams, the depth to coal and associated workings will be deeper to the north of the outcrop, and shallower the closer to the outcrop.

The Coal Authority Report indicates that 10no. coal seams underlying the Site have recorded workings within 40mbgl, and therefore may pose a High Risk to any proposed development works on the Site.

4.4 Previous Site Investigations in the Surrounding area

A number of Site investigation reports and information associated with developments in the surrounding area have been reviewed to gain further insight into the expected ground conditions on site.

Tan-Yr-Arwel Bungalow Site Investigation

A Site investigation report was prepared for a residential development at a parcel of land at Tan yr Arwel Bungalow, Swansea Road. The Site investigation, conducted by Blandford Consulting consisted of 5no. rotary boreholes advanced to a maximum depth of 30mbgl and monitored for the presence of mine gases. The Site investigation was designed and carried out under the terms of a Coal Authority Permit.

The Site investigation positions encountered made ground, boulder clay, coal measures, and a number of coal seams. The investigation indicates that the Penscallen Seam was encountered in all 5no. boreholes at depths between 25.40mbgl and 28.80mbgl. The Penscallen Seam was found to have been worked in borehole 3, with 0.9m of backfilled workings encountered.

The report summarised that there were no recognised risks to the proposed development from the underlying geology or from past underground mining operations. Risks associated with the potential collapse of the on-site disused mineshaft are present and required additional investigation.

Coal Authority Consultation response (9th September 2020) accepted that based on the findings of the report and site investigation that there is sufficient competent rock present above coal seams to provide surface instability at this site. Accordingly, no remedial or mitigation measures are considered necessary relating to shallow coal mining.

The Consultation response did require additional site investigations (trial trenching) in order to establish the condition of the on-site mine entry. The findings of the trial trenching

were to inform the development layout to ensure adequate separation between mine entry and development structures.

Day's Motor Park and associated buildings Site Investigation

An email summarising an additional phase of Site Investigation works associated with Days Motor Homes and Days Rental property located immediately north of the proposed the Site also documents the presence of coal seams of thickness between 0.7m and 0.9m, encountered at depths greater than 16mbgl. The email states that it is ***“generally that if the depth of rock above the coal seam is greater than 10 time the thickness of the seam, there will be no significant risk to development at ground level”***.

Coal Authority Consultant response (October 2014) to the Site investigation accepted that the report discounts the potential risk of stability to the development posed by shallow recorded workings.

The Coal Authority considered that the proposed watching brief and remedial measures should be extended to establishing the condition and precise location of these mine entries, with appropriate stabilisation to be undertaken where necessary. Where physical investigation of any mine entries would remain impractical, a 30m radius 'no build zone' was proposed form the approximate mine entries.

It is important to note that due to the dip of the geology (northwest), and the location of coal seam outcrops, the coal seams and associated coal workings are likely to be at a shallower depth on-site than identified within these off-site investigations which are located north of the Site.

Figure 4-1 indicates the areas of previous investigation summarised in this report.

Figure 4-1 Areas of previous Site Investigation

4.5 Mining Features

Mining features have been identified from the historic Ordnance Survey Maps, presented in Appendix C, as well as the Site Walkover photographs supplied to Hydrogeo by the applicant, and available information on the Coal Authority Interactive viewer.

The earliest available OS map (1878) shows that coal mining activities were already well established on-site, indicating that extensive coal mining operations pre-date this earliest OS map. Mining features mapped on the Ordnance Survey maps include, colliery buildings, engine houses etc., wheel houses, mine entries (shafts & adits) as well as associated rail and tramway infrastructures.

The above mining features relate to Cae-newydd Pit, Cape Colliery and a number of unlisted workings.

The Site walkover pictures as presented in Table 3-1 have identified a number of remaining mining features present on site today. These features include embanked grounds along the positions of former tram and mineral railway and sidings, potential mine entries, spoil heaps & tipped ground, and the remains of a possible wheelhouse building.

4.6 Historical Records

The earliest available OS map (1878) shows that coal mining activities were already well established on-site, indicating that extensive coal mining operations pre-date this earliest OS map. Coal Authority data indicates that the earliest recorded working date on site as 1870.

Although it may be possible that workings pre-date 1870, through unrecorded shallow workings and bell pits.

The Coal Authority Online Interactive Viewer indicates that all coal mining operations on site ceased in the 1950s.

An online search for information relating to the Cape Colliery and Cae-newydd Pit found the following information regarding the mining operations:

“Cape Colliery consisted of a pit and a slant sunk between 1899 and 1904 by the Glassbrook Brothers. It was listed under the ownership of David Rees of Forest Fach, Swansea, 1908-1915, and it employed 13 men in 1909, 17 men in 1911, 40 men in 1913 and 60 men in 1915 producing house and manufacturing coals. The Pennyscallen seam was abandoned in April 1911, and the Four-Foot seam in October 1925. It was still listed in 1930, but as closed”.

No information was available relating to the Cae-Newydd Pit.

The Coal Authority Report does not indicate the presence of opencast workings on site or within 500m of the Site. Although workings of coal seams are recorded at depths as shallow as 1m, as presented within Section 1 of the Appended Coal Authority Consultants Coal Mining Report (Appendix A), which indicates that the Pennyscallen Coal Seam has been worked at 1m depth, with an extraction thickness of 0.8m. Past underground mining of the Mynyddislwyn Lower Leaf coal seam is also recorded at its shallowest 24m depth with an extracted thickness of 200cm, therefore confirmation of the depth to bedrock would be recommended to ensure sufficient rock cover above the workings.

4.7 Borehole Records

The BGS Onshore GeoIndex online viewer indicates a number of boreholes on-site and within the vicinity of the Site. The majority of the boreholes are associated with the development of the A484 Llanelli Link Road, which intersects the Site to the north.

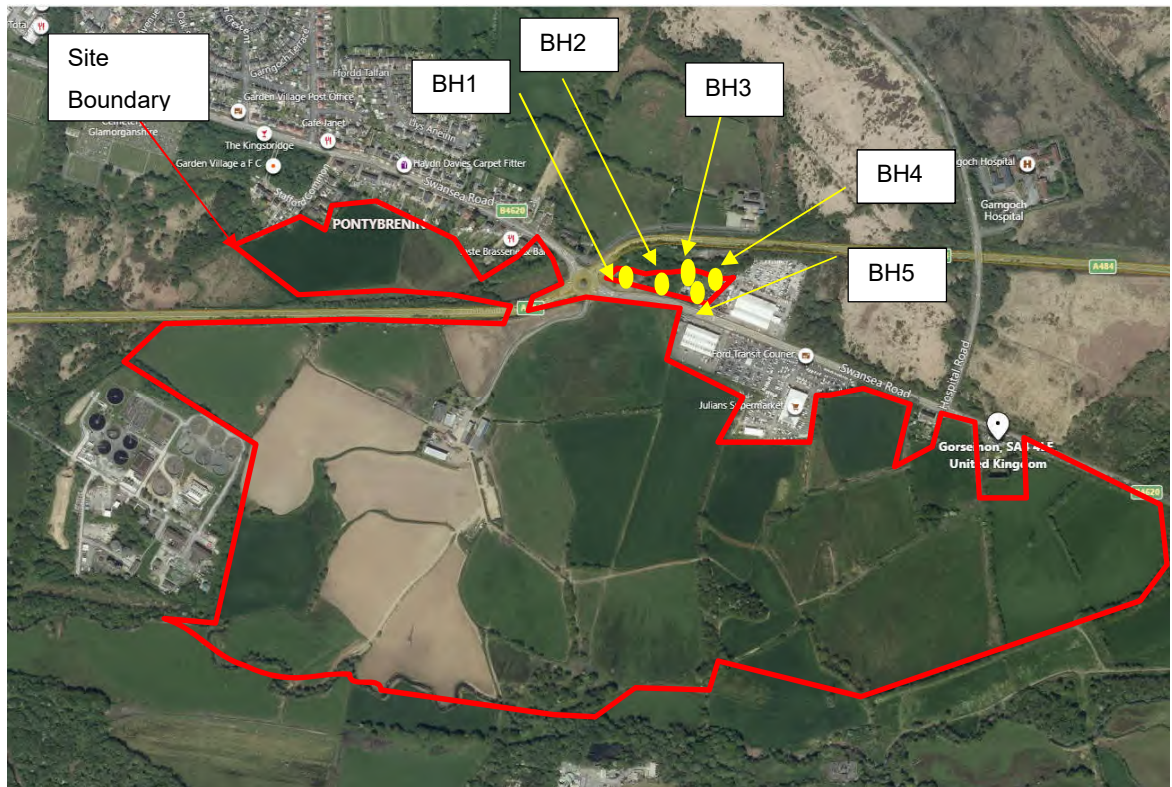
Borehole SS69NW318, was advanced immediately north of the Site in 1987 to a maximum depth of 37mbgl. The borehole encountered made ground conditions to 31.90mbgl, indicating the interception of a mine shaft. Sandstone was encountered in the base of the borehole between 31.9mbgl and 37mbgl.

Another borehole (SS69NW319), again immediately north of the Site was advanced in 1987 to a maximum depth of 35mbgl. The borehole encountered Grovesend Formation geology, consisting of interbedded mudstones, siltstones, sandstones and coal seams. 4no coal seams were identified during the advancement at the following depths and thicknesses:

- Coal 12.50mbgl -12.70mbgl (0.2m thick);
- Coal 16.10mbgl – 16.6mbgl (0.5m thick);
- Coal 19.40mbgl – 19.9mbgl (0.5m thick);
- Coal 20.90mbgl – 30.80mbgl (0.9m thick).

The borehole log did not refer to any workings or voids intercepted within the coal seams identified.

Borehole logs associated with the Site Investigation as discussed in Section 4.4, at land at Tan y Arwel Bungalow, Swansea Road (immediately north of the Site) has been summarised as follows. A plan of the borehole locations advanced during the Tan-Yr-Arwel Site investigation is included in Figure 4-2

Figure 4-2 Plan of Boreholes advanced across the Tan-Yr-Arwel Site Investigation**BH1:**

- Coal 16.3mbgl - 16.8mbgl (0.5m thick)
- Coal 28.80mbgl – 29.40mbgl (0.6m thick)

BH2:

- Coal & interbedded mudstone 14mbgl – 15.6mbgl (1.6m thick)
- Coal 27.60mbgl – 28,5mbgl (0.90m thick)

BH3:

- Coal 13.40mbgl - 13.60mbgl (0.2m thick)
- Backfilled workings 26.9mbgl – 27.8mbgl (0.9m thick)

BH4:

- Coal 13.60mbgl – 13.80mbgl (0.2m thick)
- Coal 27.30mbgl – 28.10mbgl (0.8m thick)

BH5:

- Coal 13.30mbgl – 13.50mbgl (0.2m thick)
- Coal 19.40mbgl – 19.70mbgl (0.3m thick)
- Coal 25.4mbgl – 26.2mbgl (0.8m thick)

4.8 Coal Authority Data

Potential coal mining legacy risks to the Site have been identified by the Coal Authority Consultants Mining Report, which confirms:

- The Site is underlain by Past Underground Mining. A total of 46no. coal seam workings are detailed ranging from depths of 1m below ground level to 321mbgl.
- Shallow (<30m) workings are confirmed within the Pennyscallen seam (extraction thickness up to 80cm) and Mynddislwyn Lower Leaf seam (extraction thickness up to 200cm).
- In terms of Probable unrecorded shallow workings, areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep) there are reportedly None. Therefore it appears the extent of workings is reasonably well documented beneath the Site.
- There are 3no. spine roadways at shallow depths, 2 of which are within the Site boundary.
- The Coal Authority report indicates that there are 41no. mine entries within the Site boundary or within 20m, 28 mine shafts and 13 adits.
- No opencast mines are recorded within 500m of the Site boundary.
- No Coal Authority managed tips are recorded within 500m of the boundary.
- 2no. Site Investigations have been identified within the Coal Authority Consultants report. These Site Investigations relate to areas 21.8m and 47.3m north-east of the Site. The Site Investigation areas are shown in the Summary of Findings, included as Appendix A of this report.
- 8no. remediated sites have been identified within 50m of the Site boundary, 4 of which are located onsite. The locations of these remediated areas on site are unknown. However, anecdotal evidence suggests that one of the Sites could possibly be a shaft mine entrance located within field 5 of the Site that has been backfilled following settlement of infill and overflowing of waters.
- There is a single claim within 50m of the property in relation to coal mining subsidence. The claim area is presented in the Summary of Findings in Appendix A of this report.

- There is no current Stop Notice delaying the start of remedial works or repairs on the property.
- The Coal Authority is not aware of any request having been made to carry out preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
- There is no record of mine gas emission requiring action by the Coal Authority within 500m of the Site boundary.
- There are no water treatment schemes located within 500m of the Site boundary.

The Coal Authority report can be viewed in Appendix A.

4.9 Mine entries

As previously stated the Coal Authority Consultants Report has indicated a total of 41no. mine entries located within or within 20m of the Site boundary (28 shafts & 13 Adits). The position of all of the mine entries are shown in the Coal Authority Summary of Findings presented in Appendix A of this report.

Of these entries, The Coal Authority indicates that 3no. shafts 261196-001, 261196-002 and 261196-039 have been treated.

Shaft 261196-001 is located to the north of the Site, immediately over the B4620. This shaft has been documented by the Coal Authority as historically filled, on an unknown date, and to an unknown specification. The shaft was fenced, which was repaired in 1999 by IMC. The shaft was topped up and mounded with clean stone by the Coal Authority in 2014.

Shaft 261196-002 is also located to the north of the Site, immediately over the B4620 road. The shaft was historically filled, on an unknown date, to an unknown specification. A concrete slab cap was installed over the shaft in November 1967, although there are no details on the construction of the cap. The shaft is fenced and was topped up and mounded with clean stone by the Coal Authority in 2016.

Shaft 261196-039 is located immediately south of the southern boundary of the Site and was backfilled with the previously excavated materials following the settlement of previous fill material and topped up with clean stone and the Site fenced. These works were undertaken by IMCL on behalf of the Coal Authority on 11/11/1998.

The Coal Authority has calculated a zone of influence buffer surrounding each of the entries. These buffer areas represent the area of ground that might be affected if

subsidence of the mine entry was to occur. The calculation takes into account the size of the mine entry entrance, the superficial geology for the area and the original source from which the mine entry was captured.

The Coal Authority mine entry zones of influence can be seen in Figure 4-3

Figure 4-3 – Onsite and nearby mine entries with corresponding zones of influence



4.10 Assessment of Mining Risk

Based on the information obtained in the desk-based study, a risk assessment has been formulated which identifies plausible risks at the Site in the context of the proposed development. Mitigation strategies for each coal mining risk are proposed. These are detailed in Table 4-3.

Table 4-3 - Identified Risks and Mitigation Strategy

| Risk Source | Assessment of Risk Significance | Overall Risk | Mitigation Strategy Requirements |
|---------------------------|---|--------------|--|
| Underground Mine workings | <p>Coal Authority data indicates that the Site is underlain by 46no. coal seam workings ranging from depths of 1m below ground level to 321mbgl. Of concern, <u>there are 10no. seams with recorded workings within 40mbgl.</u></p> <p>The Coal Authority recorded workings occur in the Pennyscallen and the Mynyddislwyn Lower Leaf Coal seams. The seams were worked between 1897 and 1928.</p> <p>The most recent workings occurred in the Swansea 6Ft seam in 1954. These more recent workings are present below the Site at depths in excess of 300mbgl, and therefore are unlikely to pose any risk to the proposed development.</p> <p>The Coal Authority report indicates 8no. coal seams to outcrop within the Site boundary as named in Table 4-2</p> <p>The recorded extraction thicknesses of these coal workings range from 0.7m to 2.7m.</p> <p>Considering the recorded extraction thicknesses and the resultant voids at shallow depths, the risk to the proposed development is High.</p> | High | <p>Former workings may have the potential to cause localised differential/consolidation settlement or bearing capacity failure, which may cause disruption to construction plant. Therefore it would be prudent to investigate and design appropriate pavement and development platforms in high risk areas.</p> <p>A geophysical survey of the proposed the Site has been progressed which has identified magnetic anomalies, which have the potential to represent historic mining features (shallow workings). The geophysical survey us being reviewed further by the survey team and will be utilised to assist in the targeted intrusive site investigation in areas. Intrusive investigations may also be further informed from Coal Authority Mine Abandonment Plans.</p> <p>Site Investigation will then inform any remedial works and/or mitigation measures that may be necessary.</p> <p>Permission is required from the Coal Authority Permit and Licensing Team before undertaking any activity such as ground investigation and groundworks which may disturb coal property.</p> <p>The above identified mitigation measures (site Investigation) should be progressed at an early stage in order to inform development layout and construction works.</p> <p>During construction, a watching brief should be in place such that all formations, trenches and other excavations should be inspected to confirm the absence of anomalous features. Additionally a watching brief should be maintained during operational lifespan for any unforeseen ground conditions such as unrecorded shafts and where required the mitigation measures implemented.</p> <p>Hydrogeo believe that the identified mitigation measures will adequately address the identified potential risks posed to the Site.</p> |

| Risk Source | Assessment of Risk Significance | Overall Risk | Mitigation Strategy Requirements |
|--------------------------------|--|--------------|--|
| Mine entries. | <p>48no. mine entries (shafts and adits) located on-site and within 20m of the Site boundary.</p> <p>3no. shafts are documented as treated by the Coal Authority.</p> <p>Anecdotal evidence supplied to Hydrogeo suggests that a shaft present on site (located within field 5) has been remediated by the Coal Authority following settlement of the previous infill material.</p> <p>A large number of mine entries remain present on site with unknown remediation details.</p> | Moderate | <p>It is advised that all remaining mine entries are identified and located on a Site plan to assess their present-day condition. Once identified and marked these entries should either be secured through the fencing of the entry and its entire zone of influence (stability and drainage) or subject to treatment works to ensure safety and stability, such as capping.</p> <p>The proposed development plan has considered the location of historic mine entries on the Site and has included no-development zones within the proposal to avoid these recorded entries.</p> <p>A geophysical Survey has been progressed across the development area, which has identified a number of mine shaft features, and a number of possible shallow worked areas, based upon magnetic anomalies. The survey can also be used to target site investigation to inform site development.</p> <p>Ongoing drainage from mine entries should be investigated and characterised to prevent disruption during site development.</p> <p>These mine entries and zones of influence should be maintained as devoid (panels and supporting infrastructure) and inaccessible for the lifetime of the proposed development, in order to ensure no risks arise to safety. Should the use of land be required then it will be necessary to design and construct adequate capping. The design of such features should be completed by an adequately experienced Chartered Engineer.</p> <p>Remedial / capping works will incur a significant cost to the project due to the number of mine entries on Site.</p> <p>The above identified mitigation measures (site Investigation) should be progressed at an early stage in order to inform development layout and construction works.</p> <p>Hydrogeo believe that the identified mitigation measures adequately address the identified potential risks posed to the Site.</p> |
| Coal Mining geology (fissures) | The Site is located in an area crossed by multiple faults and known to be subject to deep underground mining. | Low | <p>Deep underground mining at the Site ceased in the 1940s, and any associated ground movement with the mining is anticipated to have ceased.</p> <p>The property is in an area where notices to withdraw support were given in 1946, with no requirement to revoke the consent since. This suggests that there are no longer concerns about the risk of ground movements at the Site in relation to deep underground mining and fault reactivation.</p> <p>Upon Site clearance areas marked on the British Geological Map as faulted, should be investigated further.</p> <p>The above identified mitigation measures (site Investigation) should be progressed at an early stage in order to inform development layout and construction works.</p> <p>Hydrogeo believe that the identified mitigation measures adequately address the identified potential risks posed to the Site.</p> |

4.11 Coal Mining Risk Assessment Conclusions

Considering the number of historic mine entries (shafts and adits) across the Site, and their zones of influence, as well as the recorded shallow workings underlying the Site, historic coal mining activities may pose a potential high risk to the proposed development.

The risks during the construction of the Site can be mitigated and managed through further studies and site investigation with the mitigation measures presented in Table 4-3.

Risks during the Site operational phase are considered to be limited by the nature of the development, which consists of several solar arrays, associated cable routes, a battery storage facility and associated infrastructure.

Any buried concrete structures may require some degree of protection in these (likely) slightly acidic ground conditions. It is anticipated that site investigation and testing of ground conditions would be progressed in order to inform future design.

The coal mining related risks posed to the Site are not expected to preclude development, provided that the appropriate site investigation and mitigation measures as outlined are discussed, agreed upon with the Coal Authority and implemented.

The Coal Authority consultee correspondence indicates that they would have no objections, subject to the imposition of a condition to ensure the investigations and the completion of any necessary remedial/migratory measures.

4.12 Pre-Application Formal Correspondence

A draft of this report was initially prepared in 2021, the report was revised following changes to the overall site layout and was issued to the Coal Authority and external consultees in September 2022. The Coal Authority provided a consultee response following a review of the Draft Phase 1 Geoenvironmental Report and Coal Mining Risk Assessment.

The Coal Authority indicate that the Coal Mining Risk assessment has been informed from appropriate geological and mining information. The Coal Authority note the proposed development layout, which they state 'appears to have been designed around the recorded mine entries'.

5 Phase I Contaminated Land Assessment

5.1 Natural Resources Wales (NRW Consultee Correspondence)

Following a review of the initial draft Phase I Geo-Environmental Desk Based Study Report during a pre-application advice request, NRW provided comment in regard to the report, and additional comment following the re-consultation phase in October / November 2023.

NRW noted that the land is currently agricultural and has been for about 100 years since mining ceased in the late 19th Century. NRW advise that there is potential for land contamination from the mining activities, and although this risk to controlled waters could be considered low, the risk would still need to be considered during the proposed development.

NRW advise that due to the risk level being low, this could be controlled via an appropriately worded planning conditions on any permissions granted.

NRW indicate that a robust Construction Environment Management Plan (CEMP) should be implemented to protect the protected sites and the wider environment from pollution during the construction phase.

The CEMP should include details on; Construction methods, surface water pollution, biodiversity management, soil management, CEMP Masterplan, Control of nuisances, Resources Management, traffic management and pollution prevention.

The CEMP shall then be implemented as approved during site preparation and construction phases of development.

NRW note that there is a significant potential for contaminated surface water to be generated, with dirty water run-off into the onsite streams.

5.2 Development of the Conceptual Model – Hazard Identification

The following section sets out a Conceptual Site Model, which qualitatively describes the potential contaminant sources present, receptors upon which contaminants could have an impact and also pathways that may exist to allow contaminants to impact upon the identified receptors. The model is based on the future site use of the development area; that is continued usage as a commercial property.

A guide to contaminated land risk assessment is set out in CLR 552. The Conceptual Site Model has been developed using current UK guidelines including CLR 552 and LCRM, and developed using the information provided in available desk-based information as described in the previous sections.

Following the procedures of LCRM, to assess the potential impact of any contamination identified at the Site on receptors a risk assessment approach has been used. In order for a risk to be present at the Site three components must exist:

- Contaminant(s) must be present at concentrations capable of causing adverse effects on groundwater and human health (**Source**);
- A receptor must be present (**Receptor**); such a receptor could be environmental (e.g. a stream, groundwater), or the end user of the Site.
- There must be an exposure migration pathway by which the receptor comes into contact with the contaminant (**Pollutant Linkage**).

The source-pathway-receptor scenario is a useful means to generate a conceptual model, which can be used to identify critical pathways that a more detailed quantitative analysis may be undertaken if necessary. The first stage of the process is to determine the presence or absence of any contaminant(s) of concern (source) at the Site, followed by the most likely pathways that these contaminants would take in the environment and finally the potential receptors of concern.

5.3 Sources of Contamination

Table 5-1 summarises the potential sources of contamination identified during the desk study and review of site walkover photographs provided by the applicant.

Table 5-1 - Potential Contaminant Sources

| Land Use | Activities/Contamination Sources | Potential Contaminants |
|--|--|------------------------------------|
| <u>Historical Coal Mining Activity in the vicinity of the Site</u> | Colliery & Coal Pit sites. | Total Petroleum Hydrocarbons (TPH) |
| | Spreading of spoil. Spillages and disposal of colliery waste. | Poly Aromatic Hydrocarbons (PAH) |
| | Mine entries (shafts & adits) | Asbestos |
| | Tramways / railways & sidings. | Toxic Metals |
| | Backfilling of on-site canal. | |
| | Generation of harmful ground gas from coal measures. | Carbon dioxide |
| | Methane | |
| <u>Agricultural activities</u> | Storage of machinery and waste activities | Total Petroleum Hydrocarbons (TPH) |
| | | Poly Aromatic Hydrocarbons (PAH) |
| | | Herbicides / Pesticides. |
| | | Asbestos |
| <u>Enabling and Construction Works Phases.</u> | Preparation and clearance of the Site prior to construction works phase. | Total Petroleum Hydrocarbons (TPH) |
| | | Poly Aromatic Hydrocarbons (PAH) |
| | Construction works phase. | Engine / lubricating oils. |

5.4 Potential Contamination Transport Pathways

Construction workers may come into direct contact with soils during construction; airborne routes (inhalation of volatile compounds, inhalation or ingestion of dust created during construction).

Contaminants may leach from the soil and migrate through the unsaturated zone to underlying aquifers and surface waterbodies.

Surface water run-off during enabling and construction phase works collecting potential contaminants and transporting contaminants to surface water ditches / drains on-site.

Where piling or ground disturbance is required for foundation solutions, this may create a preferential pathway for the migration of shallows contaminants within the made ground to migrate deeper into the underlying natural strata and groundwater.

5.5 Potential Human, Environmental and Other Receptors

Human Health Receptors

Human health receptors comprise only construction workers, as the Site will not require any permanent end users.

Environmental Receptors

The bedrock and superficial geology underlying the Site are classified as Secondary A Aquifers, and may be affected by the leaching of contaminants.

The Afon Llan intersects the southern Site area and may also be affected by the leaching and runoff of contamination. The Gors-Fawr Brook bounds the Site to the south and may also be affected by the leaching and runoff of contamination.

Built Receptors

Possible built receptors include sub-surface concrete structures site buildings and constructed piles where required.

5.6 Revised Conceptual Model

The Site Conceptual Model has been revised as a result of the statutory consultee's initial pre-application responses.

Table 5-2 sets out the identified sources of contamination, the potential contaminants present, the potential transport pathways of contamination migration & movements, and the potential receptors of potential contaminants.

Table 5-2 – Revised Conceptual Site Model

| Source | Potential Contaminants | Potential Transport Pathway | Potential Receptor |
|---|--|--|---|
| | TPH PAHs Asbestos Toxic Metals | P1: Direct contact, ingestion and inhalation of soils and dust | R1: Construction Workers. |
| S1: Historical Coal Mining and associated activities and infrastructure S2: Agricultural activities and waste activities | TPH PAHs Herbicides / pesticides Toxic Metals | P2: Leaching of contaminants or spillages to ground | R2: Water Environment: Bedrock & Superficial Secondary A Aquifers. Afon Llan and Groes-Fawr Brook. |
| | Methane Carbon Dioxide | P3: Gas migration through permeable ground and preferential pathways. | R1: Construction Workers. R3: Built Receptors. |

| Source | Potential Contaminants | Potential Transport Pathway | Potential Receptor |
|---|---|--|--|
| <p>S3: Enabling and Construction Works Phases.</p> | <p>TPH PAHs Engine / lubricating oils</p> | <p>P2: Leaching of contaminants or spillages to ground P4: Surface water runoff</p> | <p>R2: Water Environment: Bedrock & Superficial Secondary A Aquifers. Afon Llan and Groes-Fawr Brook.</p> |

5.7 Risk Estimation and Risk Evaluation

The term risk is widely used in different contexts and circumstances, often with differing definitions. In UK Government publications about the environment, the standard definition is that “Risk is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence”.

Following the development of the conceptual model and the identification of potential pollutant linkages, a preliminary assessment can be made of risk estimation and risk evaluation, as discussed in LCRM and CIRIA C552, to determine whether an unacceptable contamination risk is likely to exist.

LCRM defines risk estimation as predicting the magnitude (or consequence) and probability of the risk occurring that may arise as a result of that hazard. This is also identified in CIRIA C552 in which the risk assessment methodology uses qualitative descriptors of consequence, probability and risk. These descriptors are adopted for the purposes of this risk assessment. The “hazard” or consequence of a risk occurring is classified into the following categories:

- Severe
- Medium
- Mild
- Minor

The probability or “likelihood” of a risk occurring is classified into the following categories:

- High Likelihood
- Likely
- Low Likelihood
- Unlikely

For each potential pollutant linkage identified in the conceptual model, the potential risk can be evaluated qualitatively, based on the following principle:

Overall contamination risk = Probability of event occurring x Consequence of event

This relationship can be represented in a matrix (Table 5-3), which is adapted from the CIRIA guidance.

Table 5-3 - Risk Assessment Matrix

| | | Consequence | | | |
|-------------|-----------------|----------------|---------------|---------------|---------------|
| | | Severe | Medium | Mild | Minor |
| Probability | High Likelihood | Very High Risk | High Risk | Moderate Risk | Low Risk |
| | Likely | High Risk | Moderate Risk | Moderate Risk | Low Risk |
| | Low Likelihood | Moderate Risk | Moderate Risk | Low Risk | Very Low Risk |
| | Unlikely | Low Risk | Low Risk | Very Low Risk | Very Low Risk |

The following preliminary qualitative risk evaluation can therefore be made for each significant pollutant linkage at this site, based on the defined conceptual model and the risk estimation process discussed above.

Table 5-4 presents the preliminary risk evaluation with justifications.

Table 5-4 – Preliminary Risk Assessment

| Source | Contaminant | Transport Pathway | Receptor | Hazard | Probability | Consequence | Justification/ Mitigation | Consequence with mitigation |
|---|---|--|-------------------------------------|--------|-------------------|---------------|---|-----------------------------|
| S1: Historical Coal Mining | TPH PAHs Asbestos Toxic Metals | P1: Direct contact, ingestion and inhalation of soils and dust | R1: Construction Workers. | Medium | Low Likelihood | Moderate risk | <p>Construction workers during enabling, development and maintenance phases may be at risk of disturbing made ground and potentially contaminated soils across the Site, potentially allowing for direct contact with contaminants or inhalation of vapours and airborne dust.</p> <p>Ahead of any proposed development, limited Site investigation and soil sampling/analysis, risk assessment and remedial measures (if required).</p> <p>Contractors should be made aware of the slightly increased risk during any ground disturbance works.</p> <p>Risks to be controlled by the contractor as part of Construction Design & Management (CDM) obligations.</p> <p>The use of appropriate Personal Protective Equipment (PPE), including dust masks, and eye protection.</p> <p>Hydrogeo should be contacted in the event of any grossly contaminated or malodorous / hydrocarbon-impacted soils.</p> | Low Risk |

| Source | Contaminant | Transport Pathway | Receptor | Hazard | Probability | Consequence | Justification/ Mitigation | Consequence with mitigation |
|--|------------------------------------|--|---|--------|----------------|---------------|--|-----------------------------|
| | | P2: Leaching of contaminants. | R2: Water environment: Bedrock and Superficial Secondary A Aquifer. Afon Llan & Gros-Fawr Brook. | Medium | Low Likelihood | Moderate risk | Glacial Till underlying the Site usually consists of low-permeability clays and silts which will reduce the likelihood of any lateral and vertical migration of potential contaminants. Existing Site drainage trenches and channels reduce the infiltration of waters to the ground, further preventing lateral and vertical migration. | Low Risk |
| | Methane Carbon Dioxide Radon | P3: Gas migration through permeable ground and preferential pathways. | R1: Construction Workers. R3: Built Receptors | Severe | Unlikely | Low risk | The Coal Authority report indicates that there are no reports of mine gas emissions within 500m of the Site. Due to the nature of the solar farm development, it is unlikely that gas will be able to build up within confined spaces to present an asphyxiation or explosive risk. Any site buildings should be located outside of the areas identified as requiring basic radon protection measures. | Low Risk |
| S2: Agricultural activities and waste activities | TPHs PAHs Asbestos | P1: Direct contact, ingestion and inhalation of soils and dust | R1: Construction workers | Medium | Low Likelihood | Moderate Risk | Construction workers during enabling, development and maintenance phases may be at risk of disturbing made ground and potentially contaminated soils across the Site, potentially allowing for direct contact with contaminants or inhalation of vapours and airborne dust. | Low Risk |

| Source | Contaminant | Transport Pathway | Receptor | Hazard | Probability | Consequence | Justification/ Mitigation | Consequence with mitigation |
|--------|--------------------------|--------------------------------------|---|--------|----------------|---------------|--|-----------------------------|
| | Herbicides / pesticides. | | | | | | <p>Ahead of any proposed development, limited Site investigation and soil sampling/analysis, risk assessment and remedial measures (if required).</p> <p>Contractors should be made aware of the slightly increased risk during any ground disturbance works.</p> <p>Risks to be controlled by the contractor as part of Construction Design & Management (CDM) obligations.</p> <p>The use of appropriate Personal Protective Equipment (PPE), including dust masks, and eye protection.</p> | |
| | | P2: Leaching of contaminants. | R2: Water environment: Bedrock and Superficial Secondary A Aquifer. Afon Llan & Gros-Fawr Brook. | Medium | Low Likelihood | Moderate risk | <p>Glacial Till underlying the Site usually consists of low-permeability clays and silts which will reduce the likelihood of any lateral and vertical migration of potential contaminants.</p> <p>Existing Site drainage trenches and channels reduce the infiltration of waters to the ground, further preventing lateral and vertical migration.</p> <p>A drainage survey should be progressed following site clearance in order to map any existing iron staining / or impacted waters and ensure a short circuit drainage pathway is not created through reprofiling of the Site so as to impact site surface waters</p> | Low Risk |

| Source | Contaminant | Transport Pathway | Receptor | Hazard | Probability | Consequence | Justification/ Mitigation | Consequence with mitigation |
|---|---|--------------------------------------|---|--------|-------------|---------------|--|-----------------------------|
| S3: Enabling and Construction Works Phases | PAHs – Fuels TPHs Engine / Lubricating oils | P2: Leaching of contaminants. | R2: Water environment: Bedrock and Superficial Secondary A Aquifer. Afon Llan & Gros-Fawr Brook. | Medium | Likely | Moderate Risk | Justification: During enabling and construction works phases there will be a lot of vehicular movements on site. | Low Risk |

| Source | Contaminant | Transport Pathway | Receptor | Hazard | Probability | Consequence | Justification/ Mitigation | Consequence with mitigation |
|--------|-------------|--------------------------|----------|--------|-------------|-------------|--|-----------------------------|
| | | P4: Surface water runoff | | | | | <p>Enabling and construction phase works may extend into wetter winter months where more surface water runoff will be generated.</p> <p>Mitigation:</p> <p>Attenuation/ settlement ponds should be considered to cater for road run off at strategic points.</p> <p>Consultee comments indicate the requirement for a CEMP to be in place for the enabling and construction phases of works.</p> <p>Following site investigation works and where required a remediation strategy can be progressed to detail any remedial and mitigation works needed across the Site.</p> <p>The development of a construction surface water management plan to provide information on how surface waters are to be dealt with, and treated where required.</p> <p>It is understood that a SuDs Drainage Strategy is being progressed as part of the planning application.</p> | |

6 Conclusion and Recommendations

A Phase I Desk Based Study, Coal Mining Risk Assessment and review of Site Walkover photographs as provided by the applicant has been undertaken for the Site located at Pen-y-fodau-fawr farm, and surrounding agricultural lands. Planning permission is sought from a Welsh Minister for the development of the proposed nationally significant solar power, storage and green infrastructure facility.

A review of British Geological Survey data and nearby borehole logs indicate that the Site is underlain by the Grovesend Formation, comprising predominantly argillaceous, comprising mudstones and siltstones, with well-developed coals; minor lithic (Pennant) sandstones; locally developed red mudstones in the area”.

Flood Risk

A Flood Risk Assessment has been progressed under separate cover to this report to support the planning application submission.

Unexploded Ordnance (UXO)

Review of the Zetica Online Unexploded Ordnance (UXO) Risk Maps has indicated that the site is mapped within a UXO Low Risk Area. Zetica generally recommends detailed UXO desk study and Risk Assessment is undertaken for sites mapped within moderate or high risk areas. Therefore no further works are recommended based on the application site area.

Radon

Some areas of the Site are located within areas requiring radon protection measures. The highest Radon protection requirement mapped on the Site is Basic.

The only site building proposed is located in the eastern site area, where there are no mapped radon risks, and therefore it is considered that the proposed building will not require any additional radon mitigation measures.

Coal Mining Risk Assessment

The Site is located within the South Wales Coalfield. There are a high density of historic collieries and other mining related features on-site and in the surrounding area.

Coal Authority Development High Risk Areas are present on Site, as presented in Drawing 2. These high risk areas coincide with Coal Authority Records of recorded past shallow mine workings, mapped coal seams outcrops, and mine entries (shafts & adits). Intrusive

investigations can be further informed through a review of additional mine abandonment plans and discussion with the Coal Authority. Hydrogeo has liaised with the Coal Authority and confirmed which abandonment plans would be prudent to purchase and review in order to inform targeted site investigation works.

The proposed development plan has taken into account the mine entry positions, with no-development zones in the vicinity of these entries. Geophysical investigation works have progressed which have identified a number of magnetically anomalous readings, which may represent historical mining features (entries and shallow workings). The survey will be reviewed further to inform targeted site investigation which is recommended to more accurately pinpoint the location of mine shafts within the planning site area. Site investigation data will inform zones that as a minimum are signposted and where prudent additionally secured by fencing and left devoid of structures for the lifetime of the development.

The Coal Authority Consultants Report (Appendix A) indicates that the Coal Authority believes there to be no probable unrecorded shallow workings (less than 30m deep). However, the presence of outcrops on site and also past underground mining is well documented within the report. Section 1 details past underground mining with the Pennyscalen coal seam and Mynyddislwyn Lower Leaf confirmed to have been worked at very shallow depths beneath the property.

It is recommended that Hydrogeo visit the Site prior to Site Investigation works. Site investigation works to consist of a number of targeted rotary boreholes to 30mbgl-40mbgl to investigate ground conditions, and identify coal seam condition. In addition targeted trial trenching would be recommended in order to accurately determine the positions of former mine entries within the development boundary.

Permission is required from the Coal Authority Permit and Licensing Team before undertaking any activity such as ground investigation and groundworks which may disturb coal property.

Consultation with the Coal Authority is underway regarding additional information (Mine abandonment plans etc), as well as the requirement for ongoing consultation throughout the progression of the project.

It should be recognised that during the construction phase works all formations, trenches and other excavations should be inspected by suitably qualified personnel to confirm the absence of anomalous features. Where any unforeseen ground conditions are identified

these should be highlighted to the project team and Coal Authority in the instance of unrecorded mine entries.

Contaminative Risk

A review of historical and current Ordnance Survey mapping and environmental registers has indicated that potential contaminative current and historic land uses are present at the Site. These land uses include the historic coal mining legacy of the Site, historic backfilling of the on-site canal, as well as agricultural and farming land uses.

The proposed development is of low sensitivity, with no permanent site occupants.

A conceptual model detailing potential source-pathway-receptor pollutant linkages has been produced. Potential sources of contamination are related to the historic coal mining extent and the present day agricultural activities. Potential contaminants associated with these land uses include Asbestos, TPHs, PAHs, Toxic Metals and pesticides/herbicides. Potential transport pathways of the identified contaminants include direct contact and ingestion, as well as the leaching of contaminants.

Receptors of the identified potential contaminants include site workers during enabling, construction and maintenance work phases, as well as water environment features, including the underlying Secondary A bedrock and Superficial aquifers. The Afon Llan and Gors-fawr Brook are surface water receptors.

The presence of low permeability Glacial Till underlying the Site restricts the potential for lateral and vertical migration of contaminants into the identified aquifer and surface water units. Drainage trenches/ditches present on Site reduce the infiltration of waters to the ground, further preventing the movement of contaminants

Mitigation measures to reduce the potential risks posed by the contaminants to the susceptible receptors are presented in the Preliminary Risk Assessment, Table 5-4. The mitigation measures include the standard use of PPE, including eye protection and dust masks. Construction, Design and Management obligations, as well as limited Site Investigation and soil sampling/leachability and groundwater analysis at an early stage in order to inform overall site development which must include the risk presented to controlled waters through construction and site development.

The Site Investigation and soil sampling/analysis and monitoring will inform a revised risk assessment, a Construction Environmental Management Plan (CEMP) and where required a Remediation Strategy.

Following implementation of the identified mitigation measures, it is not thought that the potential risks posed during and following development of the Site should not preclude the proposed development.

Appendices

Appendix A

Coal Authority Consultants Coal Mining Report & Summary of Findings



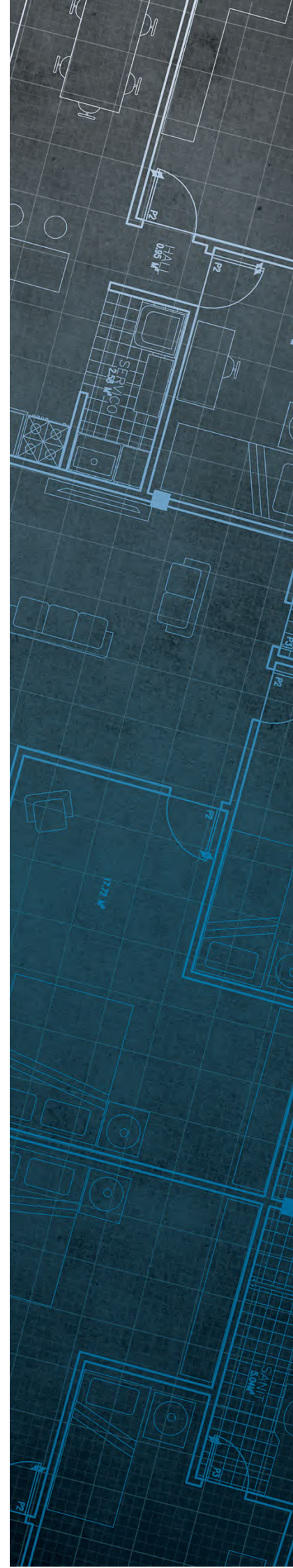
The Coal
Authority

Consultants Coal Mining Report

Penyfodau Fawr Farm
Swansea

Date of enquiry: 3 December 2021
Date enquiry received: 3 December 2021
Issue date: 3 December 2021

Our reference: 51002744314001
Your reference: PO-21-058



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

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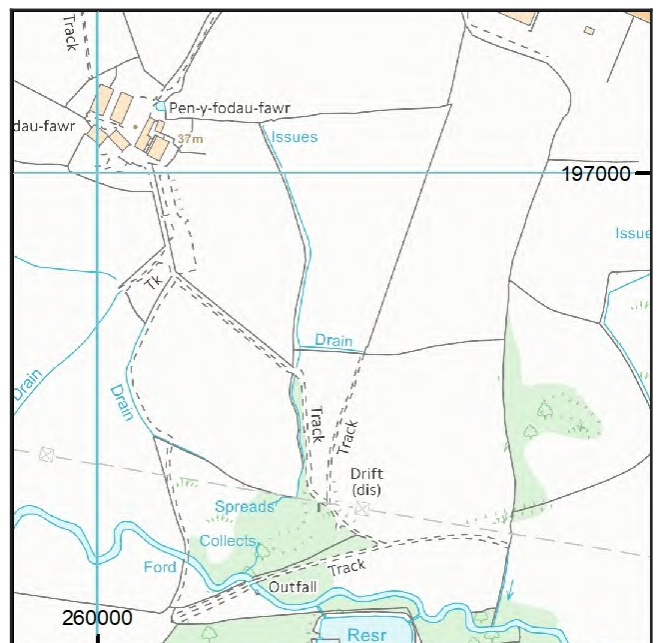
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 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

| Colliery | Seam | Mineral | Coal Authority reference | Depth (m) | Direction to working | Dipping rate of seam worked (degrees) | Dipped direction of seam worked | Extraction thickness (cm) | Year last mined |
|----------|--------------------------|---------|--------------------------|-----------|----------------------|---------------------------------------|---------------------------------|---------------------------|-----------------|
| unnamed | PENNYSCAL LEN | Coal | 4DDH | 1 | Beneath Property | 4.5 | West | 80 | 1908 |
| unnamed | PENNYSCAL LEN | Coal | 4DDK | 5 | Beneath Property | 3.0 | West | 70 | 1928 |
| unnamed | PENNYSCAL LEN | Coal | 4DFB | 6 | Beneath Property | 4.5 | West | 80 | 1900 |
| unnamed | PENNYSCAL LEN | Coal | 4DF9 | 8 | Beneath Property | 4.8 | West | 80 | 1903 |
| unnamed | PENNYSCAL LEN | Coal | 4DFA | 9 | Beneath Property | 4.5 | West | 80 | 1903 |
| unnamed | PENNYSCAL LEN | Coal | 4DF8 | 11 | Beneath Property | 4.5 | West | 80 | 1906 |
| unnamed | PENNYSCAL LEN | Coal | 4DDJ | 11 | Beneath Property | 5.1 | West | 80 | 1897 |
| unnamed | PENNYSCAL LEN | Coal | 4DFC | 12 | Beneath Property | 3.5 | West | 70 | 1926 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DF4 | 24 | North-East | 0.0 | East | 200 | 1907 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DE1 | 39 | Beneath Property | 4.3 | North-West | 130 | 1924 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DF2 | 47 | Beneath Property | 5.5 | South-West | 120 | 1880 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DE3 | 54 | Beneath Property | 6.2 | West | 120 | 1907 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DF1 | 56 | Beneath Property | 5.3 | South-West | 120 | 1879 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DEY | 58 | Beneath Property | 3.8 | North-West | 130 | 1916 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DF0 | 58 | Beneath Property | 8.2 | North-West | 130 | 1910 |

| Colliery | Seam | Mineral | Coal Authority reference | Depth (m) | Direction to working | Dipping rate of seam worked (degrees) | Dipped direction of seam worked | Extraction thickness (cm) | Year last mined |
|----------|--------------------------|---------|--------------------------|-----------|----------------------|---------------------------------------|---------------------------------|---------------------------|-----------------|
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DEZ | 63 | Beneath Property | 3.8 | North-West | 130 | 1923 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DD4 | 67 | Beneath Property | 7.8 | South-West | 130 | 1878 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4DE5 | 71 | Beneath Property | 5.4 | West | 130 | 1924 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4ZYS | 109 | Beneath Property | 27.8 | North-East | 150 | 1890 |
| unnamed | PENNYSCAL LEN | Coal | 4ZYV | 117 | Beneath Property | 29.2 | North | 160 | 1908 |
| unnamed | PENNYSCAL LEN | Coal | 4DF5 | 130 | South-East | 0.0 | East | 160 | 1841 |
| unnamed | UNNAMED | Coal | 4DDY | 134 | Beneath Property | 9.0 | North-West | 180 | 1906 |
| unnamed | PENNYSCAL LEN | Coal | 4ZYG | 137 | Beneath Property | 10.3 | North-East | 160 | 1872 |
| unnamed | UNNAMED | Coal | 4DDZ | 139 | Beneath Property | 2.1 | North-West | 180 | 1900 |
| unnamed | MYNYDDISL WYN TOP LEAF | Coal | 4ZYJ | 139 | Beneath Property | 27.8 | North-East | 170 | 1872 |
| unnamed | UNNAMED | Coal | 4DEV | 147 | Beneath Property | 2.1 | North-West | 150 | 1900 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4ZYT | 153 | South | 27.8 | North-East | 160 | 1873 |
| unnamed | PENNYSCAL LEN | Coal | 4ZYW | 159 | Beneath Property | 29.4 | North | 160 | 1877 |
| unnamed | UNNAMED | Coal | 4DEU | 161 | Beneath Property | 2.1 | North-West | 150 | 1900 |
| unnamed | UNNAMED | Coal | 4E1N | 163 | Beneath Property | 8.6 | North-West | 193 | 1911 |
| unnamed | UNNAMED | Coal | 4ZZ9 | 216 | South | 30.5 | North-East | 270 | 1880 |
| unnamed | UNNAMED | Coal | 4DET | 227 | Beneath Property | 6.3 | South-West | 220 | 1945 |
| unnamed | UNNAMED | Coal | 4ZZC | 227 | Beneath Property | 7.9 | West | 270 | 1934 |
| unnamed | UNNAMED | Coal | 4ZZB | 233 | Beneath Property | 7.4 | West | 270 | 1939 |
| unnamed | SWANSEA 6FT | Coal | 4DDS | 239 | Beneath Property | 5.3 | South-West | 179 | 1928 |
| unnamed | SWANSEA 6FT | Coal | 4DDP | 247 | Beneath Property | 6.7 | North-West | 179 | 1930 |

| Colliery | Seam | Mineral | Coal Authority reference | Depth (m) | Direction to working | Dipping rate of seam worked (degrees) | Dipped direction of seam worked | Extraction thickness (cm) | Year last mined |
|----------|--------------------------|---------|--------------------------|-----------|----------------------|---------------------------------------|---------------------------------|---------------------------|-----------------|
| unnamed | SWANSEA 6FT | Coal | 4DDR | 249 | North-East | 5.6 | North-West | 179 | 1928 |
| unnamed | UNNAMED | Coal | 4ZYM | 249 | South-West | 30.5 | North-East | 150 | 1877 |
| unnamed | SWANSEA NO.3 | Coal | 4DDL | 262 | Beneath Property | 4.1 | West | 70 | 1946 |
| unnamed | SWANSEA NO.3 | Coal | 4DEQ | 262 | Beneath Property | 3.9 | South-East | 70 | 1939 |
| unnamed | MYNYDDISL WYN LOWER LEAF | Coal | 4ZYR | 264 | Beneath Property | 27.8 | North-East | 120 | 1885 |
| unnamed | SWANSEA 6FT | Coal | 4DDV | 265 | North-East | 3.3 | West | 179 | 1924 |
| unnamed | SWANSEA NO.3 | Coal | 4DEP | 270 | Beneath Property | 2.1 | West | 70 | 1937 |
| unnamed | SWANSEA NO.3 | Coal | 4DER | 271 | Beneath Property | 3.9 | South-East | 70 | 1946 |
| unnamed | SWANSEA NO.3 | Coal | 4DEO | 271 | Beneath Property | 2.1 | West | 70 | 1940 |
| unnamed | SWANSEA NO.3 | Coal | 4DDN | 272 | North-East | 1.1 | West | 70 | 1941 |
| unnamed | SWANSEA 6FT | Coal | 4DES | 273 | Beneath Property | 2.1 | South | 180 | 1937 |
| unnamed | UNNAMED | Coal | 4ZYK | 273 | South-West | 30.5 | North-East | 150 | 1880 |
| unnamed | UNNAMED | Coal | 4E1P | 276 | Beneath Property | 5.0 | West | 220 | 1935 |
| unnamed | SWANSEA 6FT | Coal | 4DDT | 276 | Beneath Property | 0.0 | East | 179 | 1918 |
| unnamed | UNNAMED | Coal | 4ZYL | 276 | South-West | 30.5 | North-East | 150 | 1879 |
| unnamed | SWANSEA NO.3 | Coal | 4DDM | 281 | North-East | 2.7 | South-West | 70 | 1941 |
| unnamed | UNNAMED | Coal | 4ZZA | 284 | Beneath Property | 30.5 | North-East | 270 | 1885 |
| unnamed | SWANSEA 6FT | Coal | 4DDQ | 287 | Beneath Property | 9.2 | West | 179 | 1930 |
| unnamed | SWANSEA 6FT | Coal | 4E1U | 301 | Beneath Property | 6.2 | North-West | 120 | 1954 |
| unnamed | SWANSEA 6FT | Coal | 4E1T | 306 | North-East | 6.8 | North-West | 120 | 1954 |
| unnamed | SWANSEA 6FT | Coal | 4E1W | 319 | Beneath Property | 4.7 | North-West | 120 | 1950 |
| unnamed | SWANSEA 6FT | Coal | 4E1V | 321 | Beneath Property | 2.1 | North-West | 120 | 1930 |

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

| Distance to spine roadway (m) | Direction to spine roadway |
|-------------------------------|----------------------------|
| Within | N/A |
| 9.4 | South-East |
| Within | N/A |

Mine entries

| Entry type | Reference | Grid reference | Treatment description | Mineral | Conveyancing details |
|------------|------------|----------------|-----------------------|---------|----------------------|
| Adit | 260196-004 | 260248 196648 | | Coal | |
| Shaft | 260196-005 | 260843 196898 | | Coal | |
| Shaft | 260196-006 | 260444 196884 | | Coal | |
| Adit | 260196-007 | 260450 196841 | | Coal | |
| Shaft | 260196-008 | 260857 196998 | | Coal | |
| Adit | 260196-009 | 260221 196742 | | Coal | |
| Shaft | 260196-010 | 260227 196812 | | Coal | |
| Shaft | 260196-016 | 260532 196734 | | Coal | |
| Shaft | 260196-017 | 260579 196737 | | Coal | |
| Shaft | 260196-018 | 260825 196886 | | Coal | |
| Adit | 260196-020 | 260216 196735 | | Coal | |
| Shaft | 260196-021 | 260221 196819 | | Coal | |
| Shaft | 260196-022 | 260234 196804 | | Coal | |
| Adit | 260196-023 | 260425 196713 | | Coal | |
| Adit | 260196-024 | 260437 196827 | | Coal | |
| Adit | 260196-025 | 260449 196856 | | Coal | |
| Adit | 260196-026 | 260573 196703 | | Coal | |
| Shaft | 260196-027 | 260804 196903 | | Coal | |
| Shaft | 260196-028 | 260880 196896 | | Coal | |
| Shaft | 260196-033 | 260590 196857 | | Coal | |
| Adit | 260196-034 | 260587 196705 | | Coal | |
| Adit | 260196-035 | 260889 196916 | | Coal | |
| Shaft | 260196-036 | 260888 196564 | | Coal | |
| Shaft | 260197-003 | 260304 197312 | | Coal | |
| Shaft | 260197-004 | 260500 197043 | | Coal | |
| Shaft | 260197-005 | 260488 197188 | | Coal | |

| Entry type | Reference | Grid reference | Treatment description | Mineral | Conveyancing details |
|------------|------------|----------------|---|---------|--|
| Shaft | 260197-006 | 260536 197027 | | Coal | |
| Adit | 260197-007 | 260858 197017 | | Coal | |
| Shaft | 260197-008 | 260420 197201 | | Coal | C.E.M. Day Ltd 59 St. Helens Rd Swansea 19/05/1954 |
| Shaft | 260197-010 | 260479 197012 | | Coal | |
| Shaft | 260197-011 | 260480 197039 | | Coal | |
| Shaft | 260197-012 | 260946 197102 | | Coal | |
| Shaft | 261196-001 | 261217 196951 | This shaft was filled at some time in the past. There are no details on the fill material or date of filling. This shaft was also fenced which was repaired in 1999 by IMC. The shaft was topped up and mounded with clean stone by the Coal Authority in 2014 | Coal | |
| Shaft | 261196-002 | 261224 196937 | This shaft was filled at some time in the past. There are no details of the fill material or date of filling. A concrete slab was installed over this shaft in November 1967 although there are no details on the construction of the cap. The shaft is fenced and was topped up and mounded with clean stone by the Coal Authority in 2016 | Coal | |
| Shaft | 261196-012 | 261191 196648 | | Coal | |
| Shaft | 261196-013 | 261050 196670 | | Coal | |
| Adit | 261196-015 | 261035 196637 | | Coal | |
| Shaft | 261196-019 | 261033 196664 | | Coal | |
| Shaft | 261196-037 | 261058 196656 | | Coal | |
| Adit | 261196-038 | 261037 196631 | | Coal | |
| Shaft | 261196-039 | 261043 196653 | After settlement of fill material the area was backfilled with the previously excavated material and topped up with clean stone and the site fenced. These works were undertaken by IMCL on behalf of the Coal Authority in 1998 | Coal | |

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

| | | |
|-------|---------|---------|
| 4483 | 5864 | SW2239 |
| 8640 | SWR2778 | SWR2710 |
| SW153 | SW2232 | SWR2221 |

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

| Seam name | Mineral | Seam workable | Distance to outcrop (m) | Direction to outcrop | Bearing of outcrop |
|------------------------|---------|---------------|-------------------------|----------------------|--------------------|
| MYNYDDISLWYN BIG RIDER | Coal | Yes | Within | N/A | 20 |
| MYNYDDISLWYN BIG RIDER | Coal | Yes | Within | N/A | 27 |
| MYNYDDISLWYN BIG RIDER | Coal | Yes | Within | N/A | 99 |
| MYNYDDISLWYN TOP LEAF | Coal | Yes | Within | N/A | 58 |
| MYNYDDISLWYN TOP LEAF | Coal | Yes | Within | N/A | 65 |
| PENNYSCALLEN | Coal | Yes | Within | N/A | 59 |
| PENNYSCALLEN | Coal | Yes | Within | N/A | 60 |
| UNNAMED | Coal | No | Within | N/A | 22 |

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

| Distance to site investigation (m) | Direction |
|------------------------------------|------------|
| 47.3 | North-East |
| 21.8 | North-East |

See Section 4 for further information.

Remediated sites

| Distance to site remediation (m) | Direction |
|----------------------------------|------------|
| Within | N/A |
| 37.9 | South-East |
| Within | N/A |
| 46.5 | West |
| Within | N/A |
| 28.8 | South-East |
| 44.4 | North-East |
| Within | N/A |

See Section 4 for further information.

Coal mining subsidence

There are 1 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

If further subsidence damage claims information is required, please visit www.groundstability.com.

See Section 4 for further information.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is in an area where notices to withdraw support were given in 1946.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

Remediated sites

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and where necessary remediated mine entries and/or shallow coal mine workings following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the Coal Authority **Surface Hazards Incident Report**, which will include more information about the hazard.

Coal mining subsidence

The site is within an area of previous interest. It is close to where the Coal Authority or licensed mine operator has investigated and where necessary remediated issues relating to coal mining subsidence.

The site requires further investigation and may influence your risk assessment. We recommend that you order the appropriate **Coal Authority Subsidence Claims Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

Appendix B

GroundSure Report

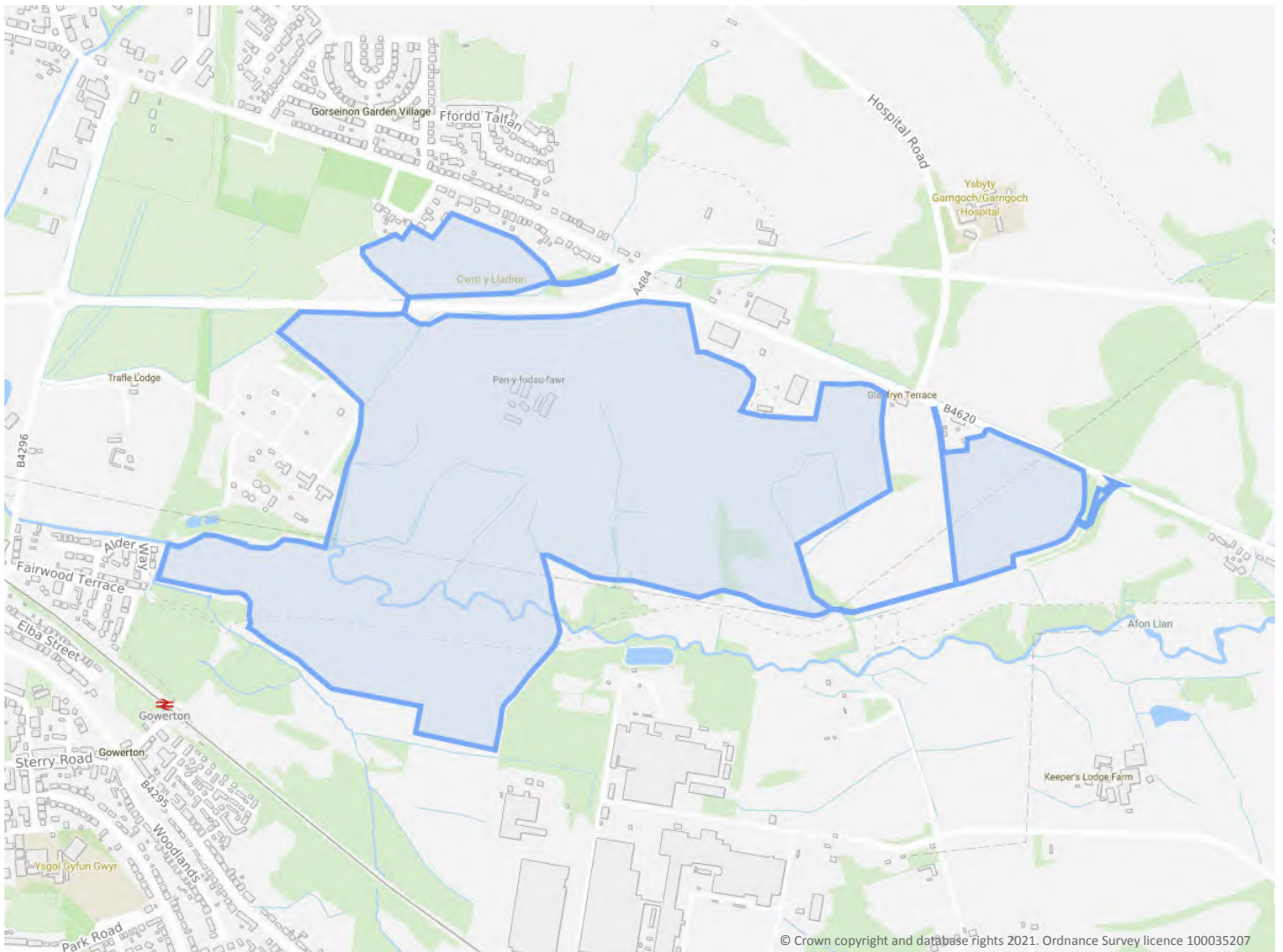
260113.56612636862, 196868.91884575313

Order Details

Date: 30/11/2021
Your ref: PO-21-056
Our Ref: HYG1-8369499
Client: Hydrogeo Ltd

Site Details

Location: 260320 196906
Area: 86.52 ha
Authority: [Abertawe - Swansea City and Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

N/A: >10ha

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

| Page | Section | Past land use | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|--------------------|---------------------|--|---------|-------|---------|----------|-----------|
| 13 | 1.1 | <u>Historical industrial land uses</u> | 55 | 53 | 162 | 209 | - |
| 31 | 1.2 | <u>Historical tanks</u> | 0 | 9 | 19 | 48 | - |
| 34 | 1.3 | <u>Historical energy features</u> | 0 | 0 | 4 | 13 | - |
| 35 | 1.4 | Historical petrol stations | 0 | 0 | 0 | 0 | - |
| 35 | 1.5 | <u>Historical garages</u> | 0 | 2 | 1 | 1 | - |
| 36 | 1.6 | Historical military land | 0 | 0 | 0 | 0 | - |
| Page | Section | Past land use - un-grouped | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 37 | 2.1 | <u>Historical industrial land uses</u> | 74 | 83 | 226 | 270 | - |
| 61 | 2.2 | <u>Historical tanks</u> | 0 | 14 | 34 | 70 | - |
| 65 | 2.3 | <u>Historical energy features</u> | 0 | 0 | 8 | 25 | - |
| 67 | 2.4 | Historical petrol stations | 0 | 0 | 0 | 0 | - |
| 67 | 2.5 | <u>Historical garages</u> | 0 | 3 | 2 | 1 | - |
| Page | Section | Waste and landfill | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 68 | 3.1 | <u>Active or recent landfill</u> | 0 | 1 | 2 | 0 | - |
| 69 | 3.2 | Historical landfill (BGS records) | 0 | 0 | 0 | 0 | - |
| 69 | 3.3 | <u>Historical landfill (LA/mapping records)</u> | 0 | 0 | 2 | 3 | - |
| 70 | 3.4 | <u>Historical landfill (EA/NRW records)</u> | 0 | 0 | 3 | 0 | - |
| 70 | 3.5 | Historical waste sites | 0 | 0 | 0 | 0 | - |
| 71 | 3.6 | <u>Licensed waste sites</u> | 0 | 0 | 13 | 3 | - |
| 75 | 3.7 | <u>Waste exemptions</u> | 0 | 0 | 5 | 16 | - |
| Page | Section | Current industrial land use | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 78 | 4.1 | <u>Recent industrial land uses</u> | 2 | 7 | 15 | - | - |
| 80 | 4.2 | <u>Current or recent petrol stations</u> | 1 | 0 | 0 | 0 | - |
| 80 | 4.3 | Electricity cables | 0 | 0 | 0 | 0 | - |
| 80 | 4.4 | Gas pipelines | 0 | 0 | 0 | 0 | - |
| 81 | 4.5 | Sites determined as Contaminated Land | 0 | 0 | 0 | 0 | - |



| 81 | 4.6 | Control of Major Accident Hazards (COMAH) | 0 | 0 | 0 | 0 | - |
|------------|-------------|---|--------------------------|-------|---------|----------|-----------|
| 81 | 4.7 | Regulated explosive sites | 0 | 0 | 0 | 0 | - |
| 81 | 4.8 | <u>Hazardous substance storage/usage</u> | 0 | 0 | 0 | 1 | - |
| 82 | 4.9 | <u>Historical licensed industrial activities (IPC)</u> | 0 | 0 | 1 | 7 | - |
| 83 | 4.10 | <u>Licensed industrial activities (Part A(1))</u> | 0 | 0 | 7 | 19 | - |
| 87 | 4.11 | <u>Licensed pollutant release (Part A(2)/B)</u> | 0 | 0 | 1 | 0 | - |
| 87 | 4.12 | Radioactive Substance Authorisations | 0 | 0 | 0 | 0 | - |
| 87 | 4.13 | <u>Licensed Discharges to controlled waters</u> | 0 | 5 | 8 | 8 | - |
| 91 | 4.14 | Pollutant release to surface waters (Red List) | 0 | 0 | 0 | 0 | - |
| 91 | 4.15 | Pollutant release to public sewer | 0 | 0 | 0 | 0 | - |
| 91 | 4.16 | List 1 Dangerous Substances | 0 | 0 | 0 | 0 | - |
| 91 | 4.17 | <u>List 2 Dangerous Substances</u> | 0 | 0 | 0 | 5 | - |
| 92 | 4.18 | <u>Pollution Incidents (EA/NRW)</u> | 1 | 3 | 39 | 11 | - |
| 97 | 4.19 | Pollution inventory substances | 0 | 0 | 0 | 0 | - |
| 98 | 4.20 | Pollution inventory waste transfers | 0 | 0 | 0 | 0 | - |
| 98 | 4.21 | Pollution inventory radioactive waste | 0 | 0 | 0 | 0 | - |
| Page | Section | Hydrogeology | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 99 | 5.1 | <u>Superficial aquifer</u> | Identified (within 500m) | | | | |
| 101 | 5.2 | <u>Bedrock aquifer</u> | Identified (within 500m) | | | | |
| 103 | 5.3 | <u>Groundwater vulnerability</u> | Identified (within 50m) | | | | |
| 106 | 5.4 | Groundwater vulnerability- soluble rock risk | None (within 0m) | | | | |
| 106 | 5.5 | Groundwater vulnerability- local information | None (within 0m) | | | | |
| 107 | 5.6 | Groundwater abstractions | 0 | 0 | 0 | 0 | 0 |
| 108 | 5.7 | <u>Surface water abstractions</u> | 0 | 0 | 1 | 0 | 4 |
| 109 | 5.8 | Potable abstractions | 0 | 0 | 0 | 0 | 0 |
| 109 | 5.9 | Source Protection Zones | 0 | 0 | 0 | 0 | - |
| 109 | 5.10 | Source Protection Zones (confined aquifer) | 0 | 0 | 0 | 0 | - |
| Page | Section | Hydrology | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 110 | 6.1 | <u>Water Network (OS MasterMap)</u> | 44 | 35 | 61 | - | - |



| 121 | 6.2 | Surface water features | 1 | 21 | 27 | - | - |
|---------------------|----------------------|---|--|-------|---------|----------|-----------|
| 122 | 6.3 | WFD Surface water body catchments | 1 | - | - | - | - |
| 122 | 6.4 | WFD Surface water bodies | 1 | 0 | 0 | - | - |
| 122 | 6.5 | WFD Groundwater bodies | 1 | - | - | - | - |
| Page | Section | River and coastal flooding | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 124 | 7.1 | Risk of flooding from rivers and the sea | High (within 50m) | | | | |
| 125 | 7.2 | Historical Flood Events | 0 | 0 | 0 | - | - |
| 125 | 7.3 | Flood Defences | 0 | 0 | 1 | - | - |
| 125 | 7.4 | Areas Benefiting from Flood Defences | 0 | 1 | 0 | - | - |
| 126 | 7.5 | Flood Storage Areas | 0 | 0 | 0 | - | - |
| 127 | 7.6 | Flood Zone 2 | Identified (within 50m) | | | | |
| 128 | 7.7 | Flood Zone 3 | Identified (within 50m) | | | | |
| Page | Section | Surface water flooding | | | | | |
| 129 | 8.1 | Surface water flooding | 1 in 30 year, Greater than 1.0m (within 50m) | | | | |
| Page | Section | Groundwater flooding | | | | | |
| 131 | 9.1 | Groundwater flooding | Low (within 50m) | | | | |
| Page | Section | Environmental designations | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 132 | 10.1 | Sites of Special Scientific Interest (SSSI) | 0 | 0 | 0 | 0 | 3 |
| 133 | 10.2 | Conserved wetland sites (Ramsar sites) | 0 | 0 | 0 | 0 | 1 |
| 133 | 10.3 | Special Areas of Conservation (SAC) | 0 | 0 | 0 | 0 | 1 |
| 134 | 10.4 | Special Protection Areas (SPA) | 0 | 0 | 0 | 0 | 1 |
| 134 | 10.5 | National Nature Reserves (NNR) | 0 | 0 | 0 | 0 | 0 |
| 135 | 10.6 | Local Nature Reserves (LNR) | 0 | 0 | 0 | 0 | 2 |
| 135 | 10.7 | Designated Ancient Woodland | 2 | 3 | 4 | 1 | 60 |
| 138 | 10.8 | Biosphere Reserves | 0 | 0 | 0 | 0 | 0 |
| 138 | 10.9 | Forest Parks | 0 | 0 | 0 | 0 | 0 |
| 138 | 10.10 | Marine Conservation Zones | 0 | 0 | 0 | 0 | 0 |
| 138 | 10.11 | Green Belt | 0 | 0 | 0 | 0 | 0 |
| 139 | 10.12 | Proposed Ramsar sites | 0 | 0 | 0 | 0 | 0 |



| | | | | | | | |
|-----|-------|---|---|---|---|---|---|
| 139 | 10.13 | Possible Special Areas of Conservation (pSAC) | 0 | 0 | 0 | 0 | 0 |
| 139 | 10.14 | Potential Special Protection Areas (pSPA) | 0 | 0 | 0 | 0 | 0 |
| 139 | 10.15 | Nitrate Sensitive Areas | 0 | 0 | 0 | 0 | 0 |
| 140 | 10.16 | Nitrate Vulnerable Zones | 0 | 0 | 0 | 0 | 0 |
| 141 | 10.17 | SSSI Impact Risk Zones | 0 | - | - | - | - |
| 141 | 10.18 | SSSI Units | 0 | 0 | 0 | 0 | 0 |

| Page | Section | Visual and cultural designations | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------------|-------------|---|---------|-------|---------|----------|-----------|
| 142 | 11.1 | World Heritage Sites | 0 | 0 | 0 | - | - |
| 143 | 11.2 | Area of Outstanding Natural Beauty | 0 | 0 | 0 | - | - |
| 143 | 11.3 | National Parks | 0 | 0 | 0 | - | - |
| 143 | 11.4 | Listed Buildings | 0 | 0 | 0 | - | - |
| 143 | 11.5 | Conservation Areas | 0 | 0 | 0 | - | - |
| 144 | 11.6 | <u>Scheduled Ancient Monuments</u> | 0 | 0 | 1 | - | - |
| 144 | 11.7 | Registered Parks and Gardens | 0 | 0 | 0 | - | - |

| Page | Section | Agricultural designations | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------------|-------------|--|-----------------------|-------|---------|----------|-----------|
| 145 | 12.1 | <u>Agricultural Land Classification</u> | Grade 4 (within 250m) | | | | |
| 146 | 12.2 | <u>Open Access Land</u> | 1 | 7 | 3 | - | - |
| 147 | 12.3 | Tree Felling Licences | 0 | 0 | 0 | - | - |
| 147 | 12.4 | Environmental Stewardship Schemes | 0 | 0 | 0 | - | - |
| 147 | 12.5 | Countryside Stewardship Schemes | 0 | 0 | 0 | - | - |

| Page | Section | Habitat designations | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------|---------|----------------------------|---------|-------|---------|----------|-----------|
| 148 | 13.1 | Priority Habitat Inventory | 0 | 0 | 0 | - | - |
| 148 | 13.2 | Habitat Networks | 0 | 0 | 0 | - | - |
| 148 | 13.3 | Open Mosaic Habitat | 0 | 0 | 0 | - | - |
| 148 | 13.4 | Limestone Pavement Orders | 0 | 0 | 0 | - | - |

| Page | Section | Geology 1:10,000 scale | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------------|-------------|--|--------------------------|-------|---------|----------|-----------|
| 149 | 14.1 | <u>10k Availability</u> | Identified (within 500m) | | | | |
| 150 | 14.2 | <u>Artificial and made ground (10k)</u> | 7 | 10 | 17 | 15 | - |
| 153 | 14.3 | <u>Superficial geology (10k)</u> | 4 | 0 | 2 | 0 | - |

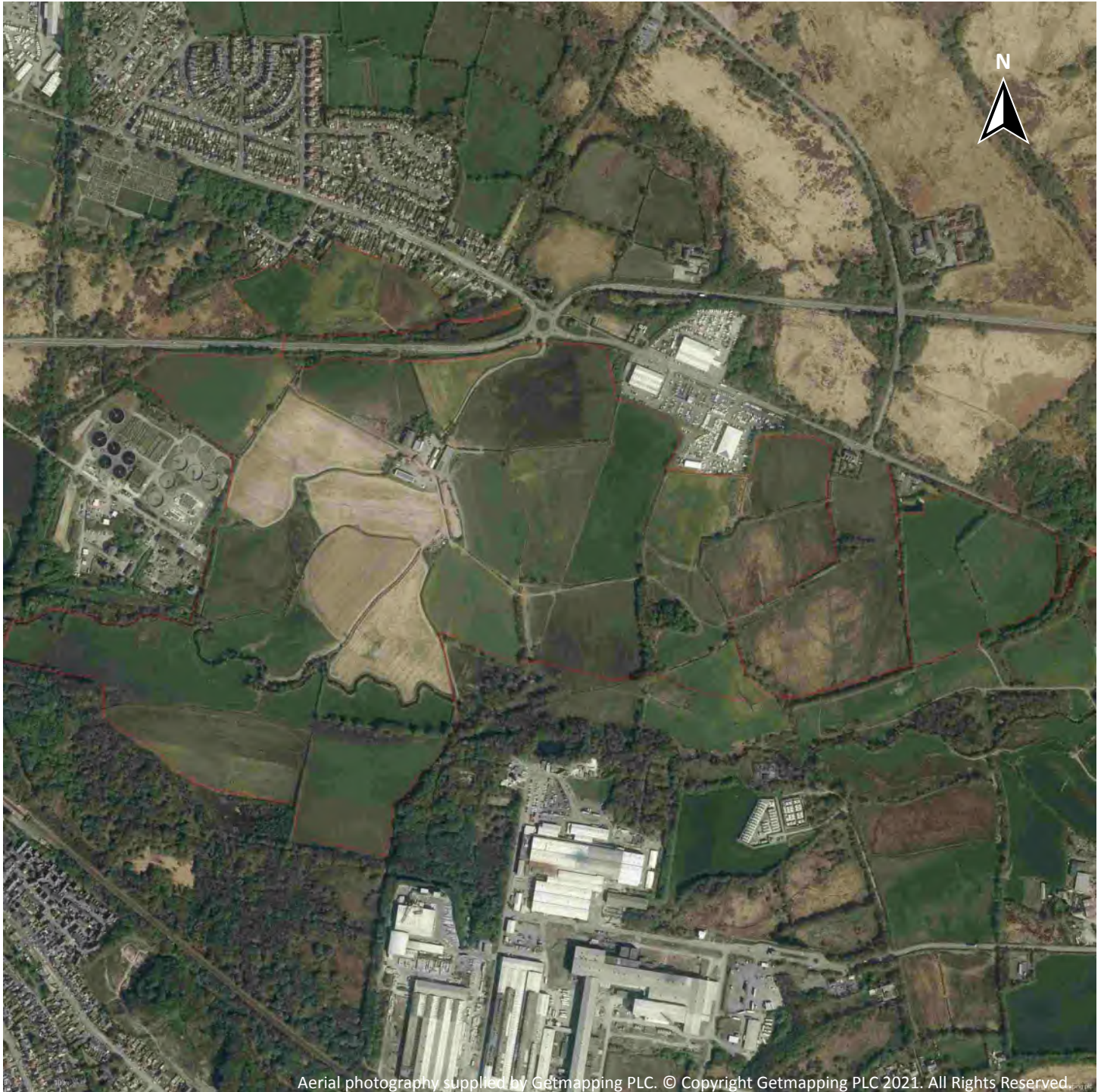


| 154 | 14.4 | Landslip (10k) | 0 | 0 | 0 | 0 | - |
|------------|--------------|--|--------------------------|-------|---------|----------|-----------|
| 155 | 14.5 | <u>Bedrock geology (10k)</u> | 12 | 0 | 2 | 7 | - |
| 156 | 14.6 | <u>Bedrock faults and other linear features (10k)</u> | 12 | 1 | 7 | 7 | - |
| Page | Section | Geology 1:50,000 scale | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 158 | 15.1 | <u>50k Availability</u> | Identified (within 500m) | | | | |
| 159 | 15.2 | <u>Artificial and made ground (50k)</u> | 1 | 3 | 1 | 4 | - |
| 160 | 15.3 | <u>Artificial ground permeability (50k)</u> | 1 | 3 | - | - | - |
| 161 | 15.4 | <u>Superficial geology (50k)</u> | 2 | 0 | 0 | 0 | - |
| 162 | 15.5 | <u>Superficial permeability (50k)</u> | Identified (within 50m) | | | | |
| 162 | 15.6 | Landslip (50k) | 0 | 0 | 0 | 0 | - |
| 162 | 15.7 | Landslip permeability (50k) | None (within 50m) | | | | |
| 163 | 15.8 | <u>Bedrock geology (50k)</u> | 8 | 0 | 1 | 4 | - |
| 164 | 15.9 | <u>Bedrock permeability (50k)</u> | Identified (within 50m) | | | | |
| 165 | 15.10 | <u>Bedrock faults and other linear features (50k)</u> | 11 | 1 | 6 | 4 | - |
| Page | Section | Boreholes | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 166 | 16.1 | <u>BGS Boreholes</u> | 2 | 8 | 11 | - | - |
| Page | Section | Natural ground subsidence | | | | | |
| 168 | 17.1 | <u>Shrink swell clays</u> | Very low (within 50m) | | | | |
| 169 | 17.2 | <u>Running sands</u> | Low (within 50m) | | | | |
| 171 | 17.3 | <u>Compressible deposits</u> | Moderate (within 50m) | | | | |
| 173 | 17.4 | <u>Collapsible deposits</u> | Very low (within 50m) | | | | |
| 174 | 17.5 | <u>Landslides</u> | Low (within 50m) | | | | |
| 176 | 17.6 | <u>Ground dissolution of soluble rocks</u> | Negligible (within 50m) | | | | |
| Page | Section | Mining, ground workings and natural cavities | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 178 | 18.1 | Natural cavities | 0 | 0 | 0 | 0 | - |
| 179 | 18.2 | <u>BritPits</u> | 2 | 3 | 4 | 1 | - |
| 181 | 18.3 | <u>Surface ground workings</u> | 36 | 54 | 150 | - | - |
| 190 | 18.4 | <u>Underground workings</u> | 3 | 12 | 15 | 7 | 43 |
| 193 | 18.5 | Historical Mineral Planning Areas | 0 | 0 | 0 | 0 | - |



| 193 | 18.6 | Non-coal mining | 0 | 0 | 0 | 0 | 0 |
|------------|-------------|--|-------------------------------|-------|---------|----------|-----------|
| 193 | 18.7 | Mining cavities | 0 | 0 | 0 | 0 | 0 |
| 194 | 18.8 | JPB mining areas | None (within 0m) | | | | |
| 194 | 18.9 | Coal mining | Identified (within 0m) | | | | |
| 194 | 18.10 | Brine areas | None (within 0m) | | | | |
| 194 | 18.11 | Gypsum areas | None (within 0m) | | | | |
| 195 | 18.12 | Tin mining | None (within 0m) | | | | |
| 195 | 18.13 | Clay mining | None (within 0m) | | | | |
| Page | Section | Radon | | | | | |
| 196 | 19.1 | Radon | Between 3% and 5% (within 0m) | | | | |
| Page | Section | Soil chemistry | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 198 | 20.1 | BGS Estimated Background Soil Chemistry | 54 | 15 | - | - | - |
| 202 | 20.2 | BGS Estimated Urban Soil Chemistry | 0 | 0 | - | - | - |
| 202 | 20.3 | BGS Measured Urban Soil Chemistry | 0 | 0 | - | - | - |
| Page | Section | Railway infrastructure and projects | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 203 | 21.1 | Underground railways (London) | 0 | 0 | 0 | - | - |
| 203 | 21.2 | Underground railways (Non-London) | 0 | 0 | 0 | - | - |
| 204 | 21.3 | Railway tunnels | 0 | 0 | 0 | - | - |
| 204 | 21.4 | Historical railway and tunnel features | 23 | 11 | 42 | - | - |
| 207 | 21.5 | Royal Mail tunnels | 0 | 0 | 0 | - | - |
| 207 | 21.6 | Historical railways | 4 | 7 | 5 | - | - |
| 208 | 21.7 | Railways | 0 | 0 | 4 | - | - |
| 208 | 21.8 | Crossrail 1 | 0 | 0 | 0 | 0 | - |
| 209 | 21.9 | Crossrail 2 | 0 | 0 | 0 | 0 | - |
| 209 | 21.10 | HS2 | 0 | 0 | 0 | 0 | - |

Recent aerial photograph



Capture Date: 13/04/2020

Site Area: 86.52ha



Recent site history - 2017 aerial photograph



Capture Date: 25/05/2017

Site Area: 86.52ha



Recent site history - 2009 aerial photograph



Capture Date: 12/10/2009

Site Area: 86.52ha



Recent site history - 2001 aerial photograph



Capture Date: 07/05/2001

Site Area: 86.52ha



Recent site history - 2000 aerial photograph

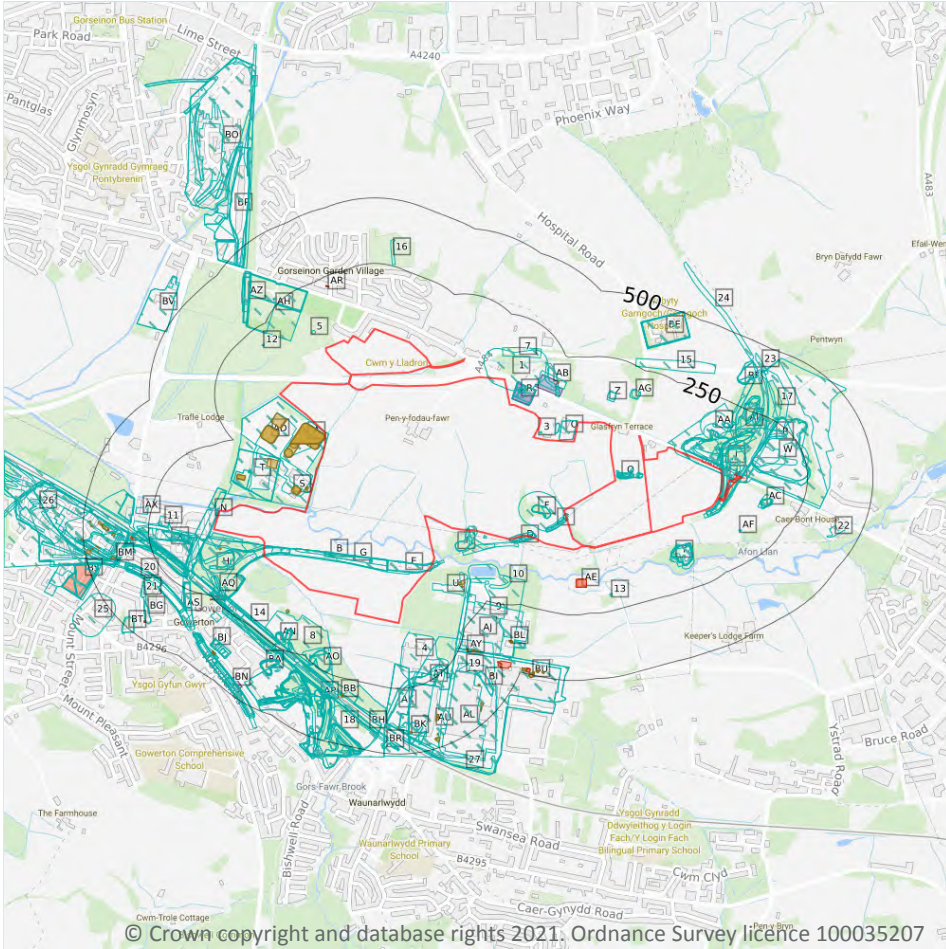


Capture Date: 24/08/2000

Site Area: 86.52ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m **479**

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| 1 | On site | Disused Colliery | 1878 | 322641 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| 2 | On site | Mineral Railway Sidings | 1900 - 1905 | 362597 |
| A | On site | Unspecified Tanks | 1988 - 1992 | 360388 |
| A | On site | Sewage Works | 1988 | 363287 |
| A | On site | Sewage Works | 1992 | 366351 |
| B | On site | Railway Buildings | 1948 | 319075 |
| B | On site | Railway Building | 1938 | 323421 |
| B | On site | Railway Building | 1900 | 339964 |
| B | On site | Mineral Railway Sidings | 1905 | 342935 |
| B | On site | Railway Building | 1905 - 1913 | 374270 |
| C | On site | Old Coal Pit | 1913 | 321371 |
| C | On site | Unspecified Pit | 1897 | 335487 |
| C | On site | Unspecified Pits | 1938 | 342286 |
| C | On site | Unspecified Pits | 1936 | 356939 |
| D | On site | Cuttings | 1878 | 336891 |
| D | On site | Unspecified Ground Workings | 1897 | 354634 |
| D | On site | Unspecified Heap | 1936 | 370751 |
| D | On site | Unspecified Heap | 1913 | 375066 |
| D | On site | Unspecified Heap | 1938 | 376081 |
| D | On site | Unspecified Ground Workings | 1947 | 376461 |
| E | On site | Railway Sidings | 1936 | 337507 |
| E | On site | Mineral Railway Sidings | 1938 - 1947 | 347038 |
| F | On site | Unspecified Old Shaft | 1913 | 337696 |
| F | On site | Unspecified Heap | 1938 | 349329 |
| F | On site | Unspecified Heap | 1938 | 352466 |
| F | On site | Unspecified Heap | 1936 | 364088 |
| F | On site | Unspecified Heap | 1947 - 1964 | 366385 |
| F | On site | Unspecified Heap | 1968 - 1994 | 367228 |
| G | On site | Mineral Railway Sidings | 1900 | 339236 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|---------------------------|---------------|----------|
| G | On site | Railway Sidings | 1936 | 370372 |
| H | On site | Tin Plate Works | 1905 | 343245 |
| H | On site | Tin Plate Works | 1900 | 352463 |
| H | On site | Tin Plate Works | 1948 | 364620 |
| H | On site | Tin Plate Works | 1913 | 380083 |
| I | On site | Unspecified Heap | 1936 - 1947 | 348503 |
| I | On site | Unspecified Heap | 1980 - 1994 | 351035 |
| I | On site | Unspecified Disused Drift | 1964 - 1968 | 369531 |
| J | On site | Coal Pit | 1878 | 320463 |
| J | On site | Colliery | 1936 - 1947 | 349362 |
| J | On site | Mineral Railway Sidings | 1938 | 352782 |
| J | On site | Mineral Railway Sidings | 1897 - 1913 | 359838 |
| J | On site | Mineral Railway Sidings | 1968 | 362574 |
| J | On site | Colliery | 1913 | 365698 |
| J | On site | Mineral Railway Sidings | 1936 | 369363 |
| J | On site | Railway Sidings | 1947 - 1964 | 379791 |
| K | On site | Railway Building | 1938 | 323420 |
| K | On site | Refuse Heap | 1938 | 351312 |
| K | On site | Mineral Railway Sidings | 1964 | 361736 |
| K | On site | Refuse Heap | 1947 | 364562 |
| K | On site | Refuse Heap | 1936 | 368935 |
| L | On site | Mineral Railway Sidings | 1938 - 1964 | 352030 |
| L | On site | Mineral Railway Sidings | 1913 | 355057 |
| L | On site | Railway Sidings | 1948 | 371264 |
| M | On site | Railway Building | 1938 - 1948 | 352233 |
| M | On site | Railway Building | 1900 - 1913 | 373560 |
| A | 1m W | Unspecified Tanks | 1974 | 345574 |
| N | 1m W | Engine House | 1878 | 348853 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------------|---------------|----------|
| N | 3m W | Engine House | 1889 | 361447 |
| O | 3m N | Unspecified Commercial/Industrial | 1994 | 331130 |
| O | 3m N | Unspecified Warehouse | 1980 | 338073 |
| P | 4m N | Unspecified Disused Mine | 1964 - 1968 | 343170 |
| K | 5m N | Railway Building | 1938 | 323418 |
| I | 7m S | Unspecified Old Drift | 1938 - 1947 | 366702 |
| Q | 7m E | Unspecified Heap | 1964 | 351944 |
| I | 8m S | Unspecified Old Drift | 1936 | 360887 |
| Q | 8m W | Unspecified Heap | 1936 - 1938 | 347965 |
| Q | 8m E | Unspecified Ground Workings | 1947 | 351822 |
| J | 9m N | Unspecified Ground Workings | 1913 | 378871 |
| Q | 9m E | Unspecified Ground Workings | 1913 | 354642 |
| Q | 9m W | Unspecified Heap | 1947 | 357108 |
| I | 10m S | Unspecified Disused Drift | 1980 - 1994 | 364829 |
| Q | 10m E | Unspecified Heap | 1968 - 1994 | 364741 |
| Q | 10m W | Unspecified Heap | 1964 | 375945 |
| Q | 10m E | Unspecified Ground Workings | 1897 | 363052 |
| Q | 10m W | Unspecified Heap | 1968 | 358832 |
| J | 11m N | Railway Buildings | 1938 | 319077 |
| Q | 11m E | Unspecified Ground Workings | 1938 | 367290 |
| J | 11m NE | Unspecified Ground Workings | 1947 | 348749 |
| Q | 11m E | Unspecified Heap | 1936 | 374193 |
| I | 12m S | Railway Sidings | 1938 - 1947 | 353553 |
| J | 12m N | Unspecified Heaps | 1936 | 363717 |
| J | 12m NE | Unspecified Heaps | 1938 | 365221 |
| R | 13m E | Garage | 1964 | 369573 |
| 3 | 13m SE | Coal Pit | 1897 | 320464 |
| H | 13m S | Unspecified Works | 1964 - 1967 | 346174 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| J | 13m N | Colliery | 1897 | 378307 |
| A | 14m W | Sewage Works | 1974 | 374847 |
| R | 19m E | Tramway Sidings | 1913 | 324130 |
| R | 19m E | Colliery | 1913 | 330864 |
| Q | 19m W | Coal Pit | 1878 | 320462 |
| I | 21m S | Mineral Railway Sidings | 1913 | 332670 |
| H | 23m W | Tin Plate Works | 1936 - 1938 | 344012 |
| O | 28m N | Unspecified Heap | 1936 - 1947 | 365089 |
| R | 29m N | Garage | 1968 - 1994 | 376334 |
| O | 30m N | Unspecified Heap | 1913 | 362005 |
| J | 33m N | Unspecified Heap | 1897 | 326967 |
| H | 34m W | Railway Sidings | 1936 | 372731 |
| J | 38m N | Unspecified Ground Workings | 1968 - 1994 | 346121 |
| S | 38m W | Unspecified Tanks | 1974 - 1992 | 352884 |
| J | 38m NE | Unspecified Shaft | 1878 | 322448 |
| T | 42m N | Sewage Works | 1948 | 348424 |
| T | 42m N | Sewage Works | 1938 | 361975 |
| R | 42m E | Refuse Heap | 1947 | 338796 |
| R | 43m E | Gravel Pit | 1938 | 328653 |
| Q | 44m W | Engine House | 1878 | 320393 |
| T | 44m N | Corporation Sewage Works | 1936 | 326341 |
| U | 47m SE | Sludge Beds | 1980 - 1994 | 360261 |
| J | 49m NE | Cuttings | 1936 - 1938 | 375514 |
| Q | 51m W | Unspecified Shaft | 1878 | 322445 |
| J | 52m NE | Cuttings | 1964 - 1968 | 352237 |
| J | 52m NE | Unspecified Pit | 1980 - 1994 | 362872 |
| 4 | 53m SE | Refuse Heap | 1992 - 1994 | 367553 |
| J | 55m NE | Engine House | 1878 | 320392 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| H | 60m S | Unspecified Disused Tip | 1988 - 1992 | 363397 |
| T | 60m N | Unspecified Works | 1964 | 320876 |
| T | 60m N | Sewage Works | 1967 | 378674 |
| W | 62m NE | Refuse Heap | 1947 | 375368 |
| W | 62m NE | Refuse Heap | 1936 | 360742 |
| J | 65m NE | Refuse Heap | 1938 | 339694 |
| W | 67m NE | Unspecified Heaps | 1964 | 322256 |
| W | 68m NE | Refuse Heap | 1938 | 355651 |
| 5 | 70m NW | Unspecified Pit | 1878 | 335489 |
| X | 70m SW | Iron Foundry | 1905 - 1913 | 351170 |
| X | 71m W | Corn Mill | 1878 | 377276 |
| Y | 73m S | Unspecified Ground Workings | 1897 | 333527 |
| Y | 75m S | Unspecified Heap | 1980 - 1994 | 340272 |
| Y | 78m S | Unspecified Heap | 1964 | 340803 |
| Y | 79m S | Unspecified Heap | 1913 - 1936 | 351229 |
| 6 | 80m NE | Unspecified Ground Workings | 1913 | 333636 |
| Y | 81m S | Unspecified Heap | 1947 | 362221 |
| X | 83m SW | Unspecified Works | 1974 | 320880 |
| Y | 83m S | Unspecified Heap | 1938 | 378700 |
| J | 84m NE | Unspecified Heap | 1897 | 326968 |
| Z | 87m N | Unspecified Ground Workings | 1913 | 333530 |
| Y | 88m S | Disused Colliery | 1878 | 322642 |
| 7 | 89m N | Cuttings | 1994 | 336889 |
| AA | 89m NE | Unspecified Shaft | 1936 | 356341 |
| X | 90m SW | Unspecified Heap | 1974 | 366212 |
| X | 92m W | Unspecified Ground Workings | 1936 | 376604 |
| X | 94m W | Unspecified Heap | 1948 | 368174 |
| X | 94m W | Unspecified Heap | 1938 | 361056 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------------|---------------|----------|
| Z | 95m N | Unspecified Works | 1980 - 1994 | 375564 |
| X | 100m SW | Iron Foundry | 1900 | 373460 |
| 8 | 102m S | Colliery | 1913 | 330846 |
| X | 103m SW | Corn Mill | 1889 | 341063 |
| X | 104m SW | Unspecified Industrial/Commercial | 1936 | 320563 |
| AB | 105m NE | Unspecified Heap | 1878 | 326969 |
| X | 107m SW | Unspecified Heap | 1913 | 326887 |
| 9 | 109m S | Unspecified Works | 1968 | 362328 |
| AB | 110m NE | Garage | 1980 - 1994 | 350835 |
| AC | 110m SE | Colliery | 1913 | 330865 |
| U | 110m E | Refuse Heap | 1980 | 338759 |
| AC | 113m SE | Unspecified Heap | 1913 | 354063 |
| L | 113m SW | Unspecified Tank | 1938 | 319913 |
| AC | 113m SE | Unspecified Heap | 1936 | 348808 |
| AC | 113m SE | Unspecified Heap | 1947 | 359313 |
| AD | 113m SW | Unspecified Tanks | 1974 - 1992 | 376454 |
| AC | 114m SE | Unspecified Heap | 1968 - 1994 | 346690 |
| AB | 114m NE | Unspecified Quarry | 1897 - 1913 | 374585 |
| AC | 114m SE | Unspecified Heap | 1938 | 374623 |
| X | 116m W | Unspecified Ground Workings | 1913 | 376299 |
| AC | 116m SE | Unspecified Heap | 1964 | 342926 |
| U | 121m SE | Unspecified Tank | 1964 - 1968 | 379478 |
| J | 122m NE | Unspecified Pit | 1968 - 1994 | 340913 |
| T | 126m N | Pump House | 1948 | 369470 |
| T | 126m N | Pump House | 1938 | 345388 |
| AF | 127m SE | Old Coal Pit | 1913 | 321370 |
| T | 128m N | Pump House | 1936 | 346090 |
| AF | 128m SE | Unspecified Old Pit | 1936 - 1947 | 339482 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------------|---------------|----------|
| AG | 135m NE | Unspecified Ground Workings | 1913 | 333529 |
| AH | 136m W | Cemetery | 1967 - 1992 | 345255 |
| AA | 138m NE | Unspecified Shaft | 1938 | 367663 |
| AI | 139m NE | Refuse Heaps | 1936 | 349815 |
| 10 | 140m S | Gravel Pit | 1968 | 328651 |
| AG | 141m NE | Unspecified Works | 1980 - 1994 | 357727 |
| AI | 143m NE | Refuse Heaps | 1938 | 339868 |
| AJ | 147m E | Unspecified Works | 1964 | 378118 |
| AA | 153m NE | Unspecified Shaft | 1947 | 353247 |
| AA | 155m NE | Refuse Heap | 1936 | 378027 |
| AA | 156m NE | Refuse Heap | 1938 | 371286 |
| AK | 156m S | Unspecified Works | 1974 | 372920 |
| AL | 156m S | Unspecified Works | 1980 | 339373 |
| AL | 156m S | Unspecified Works | 1988 | 339374 |
| AA | 158m NE | Unspecified Disused Shaft | 1980 - 1994 | 340330 |
| AM | 159m SE | Metal Works | 1947 | 318672 |
| AJ | 160m E | Unspecified Commercial/Industrial | 1994 | 331129 |
| AN | 166m SW | Unspecified Heap | 1948 | 357232 |
| AN | 166m SW | Unspecified Heap | 1913 | 373010 |
| AH | 166m NW | Cemetery | 1964 | 379548 |
| AH | 168m NW | Cemetery | 1936 - 1938 | 351257 |
| AO | 168m SW | Unspecified Slant | 1913 | 337786 |
| AP | 169m S | Railway Sidings | 1878 - 1967 | 368751 |
| AN | 171m SW | Unspecified Heap | 1967 - 1992 | 368369 |
| AN | 172m SW | Unspecified Heap | 1936 | 367059 |
| AH | 172m NW | Burial Ground | 1913 | 331045 |
| AH | 172m NW | Cemetery | 1948 | 350722 |
| AN | 173m SW | Unspecified Heap | 1964 | 364060 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| AN | 174m SW | Unspecified Heap | 1938 | 343381 |
| 11 | 174m W | Unspecified Disused Mill | 1913 | 329056 |
| AM | 175m SE | Unspecified Works | 1964 - 1967 | 368204 |
| AQ | 176m S | Railway Sidings | 1889 | 354942 |
| AA | 177m NE | Drift | 1936 | 371114 |
| AA | 177m NE | Drift | 1947 | 369186 |
| AJ | 177m SE | Unspecified Factory | 1980 | 320633 |
| AA | 178m NE | Unspecified Drift | 1938 | 326299 |
| 12 | 178m NW | Old Coal Pit | 1900 - 1905 | 366944 |
| X | 178m SW | Mineral Railway Sidings | 1905 | 357952 |
| AQ | 179m S | Railway Sidings | 1878 | 348315 |
| X | 181m SW | Cuttings | 1913 | 347441 |
| X | 181m SW | Mineral Railway Sidings | 1913 | 349088 |
| X | 181m SW | Cuttings | 1964 - 1992 | 358569 |
| X | 182m SW | Cuttings | 1878 - 1889 | 346002 |
| AO | 183m SW | Unspecified Heap | 1938 - 1948 | 372899 |
| X | 183m SW | Cuttings | 1938 | 346740 |
| X | 183m SW | Railway Sidings | 1938 - 1948 | 371953 |
| X | 183m SW | Cuttings | 1948 | 363074 |
| X | 183m SW | Cuttings | 1878 | 353035 |
| AO | 183m SW | Unspecified Ground Workings | 1974 - 1988 | 360242 |
| AO | 184m SW | Unspecified Heap | 1936 | 354315 |
| AQ | 184m SW | Cuttings | 1913 | 371289 |
| AQ | 184m S | Railway Sidings | 1948 | 377173 |
| 13 | 185m S | Unspecified Tank | 1964 | 319910 |
| AQ | 187m SW | Cuttings | 1948 | 343359 |
| AO | 187m SW | Unspecified Heap | 1992 | 357379 |
| AQ | 187m SW | Cuttings | 1938 | 353434 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| P | 188m NE | Unspecified Heap | 1897 | 326970 |
| X | 189m SW | Railway Sidings | 1948 | 358781 |
| X | 193m SW | Mineral Railway Sidings | 1900 | 360758 |
| X | 195m SW | Railway Sidings | 1936 | 364054 |
| AI | 201m N | Unspecified Heap | 1964 | 326966 |
| AI | 202m N | Unspecified Ground Workings | 1968 | 333633 |
| AI | 202m N | Unspecified Disused Drift | 1980 - 1994 | 355324 |
| X | 208m SW | Cuttings | 1948 | 342042 |
| 14 | 208m SW | Railway Sidings | 1936 | 373303 |
| AS | 213m SW | Cuttings | 1936 | 379206 |
| AT | 214m S | Gravel Pit | 1968 | 328652 |
| AN | 214m SW | Railway Sidings | 1900 | 371458 |
| AT | 215m S | Refuse Heap | 1964 | 363508 |
| AK | 216m S | Refuse Heap | 1988 | 344288 |
| AK | 216m S | Refuse Heap | 1974 | 373502 |
| X | 219m W | Railway Sidings | 1967 | 356858 |
| X | 219m W | Railway Sidings | 1964 | 371904 |
| AU | 221m SE | Railway Sidings | 1947 | 378009 |
| AV | 222m SW | Cuttings | 1948 | 359307 |
| AV | 222m SW | Cuttings | 1913 | 369239 |
| AV | 223m SW | Cuttings | 1938 | 363977 |
| AQ | 225m SW | Cuttings | 1913 | 336885 |
| AW | 225m SW | Cuttings | 1889 | 366327 |
| AW | 226m SW | Cuttings | 1878 | 379303 |
| AV | 228m SW | Railway Sidings | 1878 - 1964 | 362226 |
| AN | 231m SW | Railway Building | 1905 | 323432 |
| AL | 233m S | Unspecified Works | 1994 | 339316 |
| AL | 233m S | Unspecified Works | 1992 | 339317 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| X | 236m W | Cuttings | 1878 | 354925 |
| AQ | 237m SW | Railway Station | 1974 - 1992 | 374228 |
| AQ | 237m SW | Railway Station | 1900 | 363115 |
| AQ | 237m SW | Railway Sidings | 1936 | 372124 |
| AU | 237m S | Unspecified Works | 1968 | 357417 |
| X | 237m W | Cuttings | 1889 | 361322 |
| AQ | 237m SW | Railway Building | 1900 - 1913 | 344958 |
| AQ | 237m SW | Railway Station | 1889 | 360428 |
| AQ | 237m SW | Railway Station | 1964 - 1967 | 349841 |
| AW | 239m SW | Railway Sidings | 1936 | 367635 |
| AQ | 240m SW | Railway Station | 1878 | 365773 |
| AQ | 240m SW | Railway Station | 1905 - 1913 | 374229 |
| AQ | 242m SW | Railway Station | 1938 - 1948 | 340666 |
| AQ | 244m SW | Railway Building | 1913 | 323429 |
| AQ | 244m SW | Railway Buildings | 1938 - 1948 | 359628 |
| 15 | 247m NE | Cuttings | 1994 | 336890 |
| AN | 247m S | Railway Building | 1878 | 323431 |
| AN | 251m SW | Railway Sidings | 1889 | 351119 |
| AQ | 252m SW | Railway Building | 1964 | 323430 |
| AP | 253m SW | Railway Sidings | 1936 | 342244 |
| 16 | 255m N | Unspecified Ground Workings | 1988 - 1992 | 348991 |
| AN | 258m SW | Railway Building | 1936 | 359976 |
| X | 258m W | Cuttings | 1878 | 349694 |
| AN | 260m SW | Railway Buildings | 1938 - 1948 | 355844 |
| 17 | 260m NE | Unspecified Ground Workings | 1913 | 333632 |
| AX | 260m W | Disused Chemical Works | 1905 | 337992 |
| 18 | 263m S | Colliery | 1878 - 1889 | 379571 |
| AN | 264m SW | Railway Building | 1964 | 342651 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| AN | 264m SW | Railway Building | 1913 | 323355 |
| AW | 266m SW | Cattle Pens | 1936 | 331095 |
| AH | 268m NW | Old Coal Pit | 1900 - 1905 | 364707 |
| AN | 268m SW | Unspecified Heap | 1913 | 326877 |
| AP | 277m S | Disused Colliery | 1900 - 1905 | 353217 |
| X | 277m W | Unspecified Heap | 1913 | 326886 |
| AS | 279m SW | Cuttings | 1948 | 358879 |
| AS | 279m SW | Cuttings | 1913 | 364682 |
| AS | 279m SW | Cuttings | 1938 | 355580 |
| AP | 279m S | Disused Colliery | 1913 | 374715 |
| AS | 280m SW | Cuttings | 1878 - 1889 | 365613 |
| AS | 280m SW | Cuttings | 1992 | 362819 |
| AQ | 280m SW | Telephone Exchange | 1974 - 1992 | 367980 |
| AZ | 281m NW | Cuttings | 1878 | 352197 |
| AS | 281m SW | Cuttings | 1878 | 356761 |
| AS | 283m SW | Cuttings | 1964 | 375384 |
| AS | 283m SW | Cuttings | 1967 | 375529 |
| AL | 284m SE | Unspecified Works | 1968 | 369787 |
| AZ | 285m NW | Cuttings | 1889 | 360948 |
| AZ | 288m NW | Cuttings | 1878 | 345264 |
| AP | 290m S | Railway Sidings | 1889 | 363260 |
| 19 | 291m SE | Unspecified Pit | 1964 | 335482 |
| BA | 294m SW | Unspecified Heap | 1900 | 369218 |
| BA | 295m SW | Unspecified Ground Workings | 1936 | 333511 |
| BA | 295m SW | Unspecified Heap | 1948 | 362704 |
| BA | 295m SW | Unspecified Heap | 1905 - 1913 | 374249 |
| BA | 298m SW | Unspecified Heap | 1938 | 357704 |
| BA | 298m SW | Unspecified Heap | 1938 | 379447 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| BA | 299m SW | Unspecified Heap | 1974 - 1992 | 347795 |
| BA | 300m SW | Unspecified Heap | 1964 - 1967 | 353107 |
| 20 | 305m SW | Railway Sidings | 1936 | 369360 |
| AP | 306m SW | Railway Building | 1938 - 1948 | 348619 |
| AP | 309m S | Unspecified Ground Workings | 1900 | 365648 |
| BB | 309m S | Railway Building | 1938 - 1948 | 351513 |
| BB | 309m S | Unspecified Tank | 1913 | 319911 |
| X | 311m W | Unspecified Heap | 1948 | 365024 |
| X | 312m W | Unspecified Heap | 1936 | 343438 |
| AP | 312m S | Unspecified Heaps | 1948 | 350946 |
| AP | 312m S | Unspecified Heaps | 1905 - 1913 | 377963 |
| X | 312m W | Unspecified Heap | 1938 | 347145 |
| AP | 312m SW | Unspecified Ground Workings | 1938 | 339245 |
| AP | 312m SW | Unspecified Ground Workings | 1938 | 339246 |
| AP | 312m SW | Unspecified Ground Workings | 1936 | 339247 |
| AP | 313m SW | Unspecified Ground Workings | 1936 | 344382 |
| AP | 313m SW | Unspecified Heap | 1974 | 340932 |
| BC | 313m W | Disused Chemical Works | 1878 | 343177 |
| AP | 314m SW | Unspecified Heaps | 1988 - 1992 | 341965 |
| BB | 314m S | Unspecified Tank | 1936 - 1938 | 358838 |
| AP | 315m SW | Unspecified Heap | 1964 - 1967 | 373970 |
| BC | 315m W | Disused Chemical Works | 1889 | 366983 |
| BB | 316m S | Unspecified Tank | 1948 | 349351 |
| BB | 316m S | Unspecified Tank | 1913 | 368565 |
| BC | 316m W | Disused Chemical Works | 1878 | 363520 |
| BC | 318m W | Disused Chemical Works | 1900 | 374811 |
| X | 321m W | Railway Sidings | 1936 | 339861 |
| X | 321m W | Steel Works | 1936 | 358839 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| AZ | 321m NW | Cuttings | 1913 | 368941 |
| X | 323m W | Steel Works | 1900 | 378411 |
| X | 323m W | Steel Works | 1905 - 1913 | 363366 |
| BD | 323m SW | Unspecified Heaps | 1913 | 359209 |
| BD | 323m SW | Unspecified Heaps | 1948 | 363995 |
| X | 324m W | Disused Steel Works | 1878 | 366274 |
| X | 325m W | Disused Steel Works | 1889 | 341712 |
| X | 327m W | Unspecified Works | 1964 | 352267 |
| X | 327m W | Steel Works | 1938 - 1948 | 371380 |
| BD | 327m S | Unspecified Ground Workings | 1900 | 373037 |
| BE | 327m NE | Hospital | 1964 | 341177 |
| BE | 328m NE | Hospital | 1968 - 1994 | 344260 |
| BD | 328m S | Unspecified Disused Tip | 1988 | 332844 |
| X | 328m W | Unspecified Works | 1967 - 1974 | 345499 |
| BD | 329m S | Unspecified Heaps | 1905 | 371941 |
| BF | 330m NE | Unspecified Heap | 1964 | 364058 |
| BE | 332m NE | Isolation Hospital | 1936 | 342104 |
| BE | 332m NE | Isolation Hospital | 1947 | 372277 |
| BF | 333m NE | Unspecified Heap | 1980 - 1994 | 349386 |
| BE | 333m NE | Isolation Hospital | 1913 | 343222 |
| BG | 333m SW | Unspecified Heaps | 1878 - 1889 | 347797 |
| BD | 333m S | Unspecified Heap | 1974 | 340956 |
| BE | 333m NE | Isolation Hospital | 1938 | 340257 |
| BD | 334m S | Unspecified Ground Workings | 1964 | 369613 |
| BD | 334m S | Unspecified Heap | 1967 | 370127 |
| BF | 334m NE | Unspecified Ground Workings | 1913 | 346771 |
| BF | 334m NE | Unspecified Ground Workings | 1947 | 379583 |
| BF | 335m NE | Unspecified Heaps | 1938 | 347503 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| BF | 335m NE | Unspecified Heap | 1936 | 342318 |
| AP | 336m S | Unspecified Heap | 1878 - 1889 | 357870 |
| AZ | 340m NW | Cuttings | 1974 | 364936 |
| Z1 | 341m SW | Unspecified Heap | 1878 | 326878 |
| AZ | 341m NW | Cuttings | 1964 - 1967 | 364978 |
| X | 346m W | Railway Sidings | 1878 | 348319 |
| BH | 347m S | Railway Sidings | 1878 | 379187 |
| AP | 348m SW | Unspecified Heap | 1878 | 339679 |
| AP | 349m SW | Unspecified Heap | 1889 | 365674 |
| X | 350m W | Boiler | 1889 | 320450 |
| BI | 351m SE | Refuse Heap | 1964 | 338751 |
| X | 354m W | Railway Sidings | 1889 | 359935 |
| BI | 356m SE | Gravel Pit | 1968 | 328650 |
| AP | 357m S | Unspecified Tanks | 1878 - 1889 | 342689 |
| AP | 357m S | Unspecified Tank | 1878 | 319916 |
| AP | 357m SW | Unspecified Heap | 1878 | 356566 |
| AP | 357m SW | Unspecified Ground Workings | 1889 | 341118 |
| BJ | 360m SW | Police Station | 1905 | 356977 |
| BJ | 364m SW | Police Station | 1936 | 351928 |
| BJ | 365m SW | Police Station | 1900 | 372874 |
| BJ | 366m SW | Police Station | 1938 | 344731 |
| BJ | 366m SW | Police Station | 1948 | 368235 |
| X | 367m W | Refuse Heap | 1913 | 338760 |
| BJ | 368m SW | Police Station | 1913 | 375477 |
| AP | 373m S | Unspecified Tank | 1878 | 319902 |
| BJ | 376m SW | Police Station | 1992 | 362498 |
| BJ | 377m SW | Police Station | 1974 - 1988 | 365234 |
| X | 378m W | Unspecified Tank | 1974 | 368985 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|---------------------|---------------|----------|
| BH | 378m S | Unspecified Pit | 1974 | 335481 |
| BJ | 378m SW | Police Station | 1964 - 1967 | 379901 |
| BK | 380m S | Unspecified Heaps | 1938 | 353878 |
| BG | 380m SW | Unspecified Heap | 1878 | 326879 |
| BK | 381m S | Unspecified Heap | 1936 | 326875 |
| BJ | 382m S | Railway Building | 1938 - 1948 | 353984 |
| BJ | 383m SW | Railway Station | 1889 | 346075 |
| BJ | 383m SW | Railway Station | 1900 | 363029 |
| X | 384m W | Unspecified Tank | 1938 | 346018 |
| BJ | 385m SW | Railway Station | 1905 | 366406 |
| BJ | 385m SW | Railway Station | 1878 | 373965 |
| BJ | 385m SW | Railway Station | 1936 | 341028 |
| BJ | 385m SW | Railway Station | 1913 | 361317 |
| BJ | 385m SW | Railway Station | 1938 - 1964 | 360075 |
| AP | 387m SW | Cuttings | 1878 - 1889 | 366284 |
| 22 | 387m SE | Unspecified Factory | 1897 | 320635 |
| BK | 387m S | Railway Sidings | 1974 | 349828 |
| AP | 388m SW | Cuttings | 1878 | 342709 |
| AP | 389m SW | Unspecified Tank | 1889 | 319914 |
| BJ | 393m SW | Cuttings | 1889 | 363381 |
| BJ | 394m SW | Cuttings | 1878 | 370848 |
| BJ | 395m SW | Cuttings | 1878 | 366395 |
| BJ | 396m SW | Cuttings | 1913 | 370289 |
| AP | 398m S | Unspecified Tank | 1878 | 319915 |
| 23 | 399m N | Unspecified Pit | 1913 | 335488 |
| BJ | 407m SW | Railway Building | 1938 - 1948 | 368871 |
| BJ | 408m SW | Unspecified Tank | 1913 | 319917 |
| X | 409m W | Unspecified Tank | 1936 | 319912 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| BJ | 410m SW | Railway Buildings | 1905 | 319060 |
| BJ | 416m SW | Railway Building | 1948 | 323356 |
| AP | 419m SW | Smithy | 1878 - 1889 | 369518 |
| AP | 419m SW | Smithy | 1878 | 356066 |
| X | 421m W | Unspecified Ground Workings | 1878 | 333531 |
| BJ | 421m SW | Cuttings | 1938 - 1948 | 347533 |
| BN | 422m SW | Railway Sidings | 1900 | 365433 |
| BN | 424m SW | Railway Sidings | 1905 | 376050 |
| BK | 425m S | Unspecified Pit | 1938 | 349818 |
| BD | 427m S | Unspecified Heap | 1878 | 356074 |
| BN | 427m SW | Railway Sidings | 1936 | 370018 |
| BK | 428m S | Unspecified Pit | 1936 | 379996 |
| 24 | 428m NE | Cuttings | 1913 | 336888 |
| BO | 428m NW | Unspecified Works | 1964 | 379815 |
| BN | 430m SW | Railway Sidings | 1948 | 359028 |
| BN | 431m SW | Railway Sidings | 1913 | 364834 |
| BN | 432m SW | Railway Sidings | 1938 | 372383 |
| BD | 432m S | Unspecified Heap | 1878 - 1889 | 371395 |
| BO | 441m NW | Railway Sidings | 1938 | 343637 |
| BP | 441m NW | Abattoir | 1938 | 338022 |
| BO | 442m NW | Steel Works | 1948 | 345471 |
| BO | 442m NW | Railway Sidings | 1948 | 369809 |
| BP | 442m NW | Tin Plate Works | 1948 | 361584 |
| BP | 442m NW | Tin Plate Works | 1913 | 368831 |
| BD | 446m S | Unspecified Pit | 1974 | 335480 |
| BR | 447m S | Furnace | 1878 | 321756 |
| X | 449m W | Chimneys | 1967 - 1974 | 375938 |
| BS | 452m W | Brick Field | 1889 | 368315 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|-----------------------------------|---------------|----------|
| BN | 453m SW | Railway Sidings | 1878 | 362219 |
| BO | 453m NW | Railway Sidings | 1936 | 364464 |
| BS | 454m W | Gas Works | 1913 | 321787 |
| BS | 454m W | Brick Field | 1878 | 355110 |
| BT | 455m SW | Burial Ground | 1878 - 1889 | 377779 |
| BT | 456m SW | Burial Ground | 1878 | 351597 |
| BS | 456m W | Unspecified Disused Works | 1974 | 326419 |
| BR | 456m S | Unspecified Heap | 1936 | 375866 |
| BS | 457m W | Unspecified Commercial/Industrial | 1948 | 369898 |
| BO | 457m NW | Railway Sidings | 1913 | 361755 |
| BR | 457m S | Unspecified Heap | 1947 | 360380 |
| BR | 457m S | Unspecified Ground Workings | 1938 | 378405 |
| BS | 457m W | Unspecified Commercial/Industrial | 1964 | 371751 |
| BS | 457m W | Unspecified Commercial/Industrial | 1938 | 358600 |
| BS | 458m W | Unspecified Commercial/Industrial | 1936 | 379615 |
| BS | 458m W | Unspecified Works | 1967 | 366554 |
| BS | 458m W | Unspecified Works | 1988 - 1992 | 371823 |
| AP | 460m S | Sawmill | 1878 - 1889 | 379429 |
| AP | 460m S | Sawmill | 1878 | 362590 |
| BR | 463m S | Old Lime Kiln | 1913 | 332123 |
| BS | 467m W | Unspecified Kiln | 1878 - 1889 | 363293 |
| BS | 467m W | Unspecified Kiln | 1878 | 377890 |
| 25 | 473m SW | Smithy | 1905 | 332467 |
| 26 | 477m W | Manure Works | 1938 | 364109 |
| BU | 491m S | Unspecified Tank | 1980 - 1994 | 372495 |
| BV | 495m NW | Unspecified Factory | 1974 | 350801 |
| BV | 495m NW | Unspecified Factory | 1988 - 1992 | 364144 |
| 27 | 495m S | Unspecified Ground Workings | 1964 | 333516 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| X | 497m W | Chimneys | 1967 - 1974 | 342562 |
| BS | 499m W | Unspecified Kiln | 1889 | 356367 |

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

| | |
|----------------------------|-----------|
| Records within 500m | 76 |
|----------------------------|-----------|

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| A | 2m W | Tanks | 1984 | 40116 |
| A | 3m W | Tanks | 1995 | 41267 |
| A | 5m W | Tanks | 1991 | 40551 |
| S | 13m W | Tanks | 1993 | 41685 |
| S | 17m W | Tanks | 1988 | 44657 |
| A | 20m W | Tanks | 1993 | 39438 |
| A | 24m W | Unspecified Tank | 1988 | 40797 |
| S | 37m W | Tanks | 1993 | 43835 |
| S | 42m W | Tanks | 1988 | 43894 |
| V | 58m SW | Tanks | 1984 | 41332 |
| V | 61m SW | Tanks | 1991 | 43415 |
| H | 64m S | Unspecified Tank | 1958 - 1965 | 41677 |
| R | 71m N | Unspecified Tank | 1946 | 37758 |
| T | 95m N | Tanks | 1965 | 39441 |
| T | 97m N | Settling Tanks | 1935 | 39841 |
| A | 97m W | Tanks | 1993 | 39437 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| A | 100m W | Unspecified Tank | 1988 | 44129 |
| A | 108m NW | Unspecified Tank | 1988 | 41379 |
| L | 110m SW | Unspecified Tank | 1935 | 37765 |
| AD | 115m SW | Tanks | 1984 - 1995 | 41222 |
| AD | 117m SW | Tanks | 1991 | 42275 |
| U | 122m SE | Unspecified Tank | 1958 - 1990 | 40651 |
| U | 123m SE | Tanks | 1993 | 39434 |
| U | 138m SE | Unspecified Tank | 1986 - 1993 | 44525 |
| U | 140m SE | Unspecified Tank | 1958 - 1971 | 43522 |
| AB | 143m NE | Unspecified Tank | 1988 - 1992 | 41364 |
| A | 151m N | Tanks | 1965 | 39440 |
| AT | 249m SE | Unspecified Tank | 1990 - 1993 | 42404 |
| AX | 275m W | Unspecified Tank | 1879 | 37793 |
| AY | 276m E | Tanks | 1971 - 1993 | 44263 |
| AY | 299m E | Tanks | 1971 - 1990 | 43608 |
| AY | 302m E | Tanks | 1993 | 40530 |
| BB | 310m S | Unspecified Tank | 1935 - 1965 | 44536 |
| BB | 313m S | Unspecified Tank | 1916 | 41766 |
| AY | 319m E | Unspecified Tank | 1971 | 37759 |
| X | 377m W | Unspecified Tank | 1965 | 37792 |
| AU | 378m SE | Tanks | 1971 - 1982 | 42914 |
| AU | 379m SE | Tanks | 1986 | 42199 |
| BI | 383m SE | Unspecified Tank | 1971 - 1986 | 41844 |
| BL | 385m S | Unspecified Tank | 1990 | 37761 |
| BL | 389m S | Unspecified Tank | 1993 | 37760 |
| BM | 392m W | Unspecified Tank | 1916 | 37779 |
| AU | 392m S | Tanks | 1971 - 1982 | 40893 |
| AU | 393m S | Tanks | 1986 | 44289 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| BM | 394m W | Tanks | 1935 | 39443 |
| BK | 397m S | Unspecified Tank | 1965 | 37766 |
| X | 401m W | Unspecified Tank | 1935 | 43030 |
| X | 401m W | Unspecified Tank | 1958 - 1965 | 44508 |
| X | 403m W | Tanks | 1965 | 39447 |
| BI | 404m SE | Tanks | 1971 | 39423 |
| BJ | 406m SW | Unspecified Tank | 1916 - 1935 | 41868 |
| BJ | 409m SW | Unspecified Tank | 1958 | 42705 |
| BK | 417m S | Unspecified Tank | 1971 | 37767 |
| X | 427m W | Tanks | 1965 | 39446 |
| AL | 437m SE | Unspecified Tank | 1990 - 1993 | 42746 |
| X | 443m W | Tanks | 1879 | 39445 |
| BQ | 445m S | Unspecified Tank | 1971 | 37768 |
| AL | 448m SE | Tanks | 1971 | 39424 |
| X | 449m W | Unspecified Tank | 1958 | 37780 |
| BQ | 461m S | Tanks | 1971 - 1994 | 42857 |
| BQ | 462m S | Unspecified Tank | 1982 | 37769 |
| X | 465m W | Unspecified Tank | 1958 | 37794 |
| X | 468m W | Unspecified Tank | 1958 | 37781 |
| X | 471m W | Unspecified Tank | 1958 | 37795 |
| X | 472m W | Unspecified Tank | 1935 | 37789 |
| X | 475m W | Unspecified Tank | 1965 | 37783 |
| BU | 477m S | Unspecified Tank | 1986 - 1990 | 42443 |
| BU | 477m S | Unspecified Tank | 1986 - 1990 | 42736 |
| BU | 479m S | Unspecified Tank | 1993 | 40858 |
| BU | 480m S | Unspecified Tank | 1993 | 41194 |
| BU | 481m S | Unspecified Tank | 1986 - 1990 | 42826 |
| BU | 482m S | Unspecified Tank | 1993 | 42553 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| BU | 487m S | Unspecified Tank | 1986 - 1993 | 41624 |
| BU | 496m S | Unspecified Tank | 1986 - 1990 | 41573 |
| BU | 498m S | Unspecified Tank | 1993 | 41930 |
| X | 500m W | Unspecified Tank | 1935 | 37788 |

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

17

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------------|---------------|----------|
| AE | 113m S | Electricity Substation | 1971 - 1990 | 21507 |
| AE | 115m S | Electricity Substation | 1993 | 21174 |
| AR | 207m NW | Electricity Substation | 1995 | 23231 |
| AR | 212m NW | Electricity Substation | 1991 | 21933 |
| AQ | 281m SW | Electricity Substation | 1993 | 20768 |
| AQ | 282m SW | Electricity Substation | 1988 | 22176 |
| X | 297m W | Electricity Substation | 1986 - 1990 | 21793 |
| X | 309m W | Electricity Substation | 1998 | 23116 |
| BI | 405m E | Electricity Substation | 1986 - 1990 | 20380 |
| BI | 412m E | Electricity Substation | 1993 | 22295 |
| BG | 436m SW | Electricity Substation | 1986 - 1998 | 20218 |
| BS | 458m W | Disused Gas Works | 1965 | 19705 |
| BN | 463m SW | Electricity Substation | 1988 | 20752 |
| BN | 471m SW | Electricity Substation | 1993 | 19164 |



| ID | Location | Land use | Dates present | Group ID |
|----|----------|------------------------|---------------|----------|
| BU | 478m S | Electricity Substation | 1986 - 1990 | 21027 |
| BU | 480m S | Electricity Substation | 1993 | 21828 |
| BS | 491m W | Gas Governor | 1986 - 1998 | 22153 |

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

| | |
|----------------------------|----------|
| Records within 500m | 4 |
|----------------------------|----------|

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

| ID | Location | Land use | Dates present | Group ID |
|----|----------|----------|---------------|----------|
| R | 13m E | Garage | 1988 - 1992 | 7778 |
| R | 13m E | Garage | 1946 | 7069 |
| AB | 96m N | Garage | 1988 - 1992 | 7573 |
| BN | 438m SW | Garage | 1965 | 6627 |

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

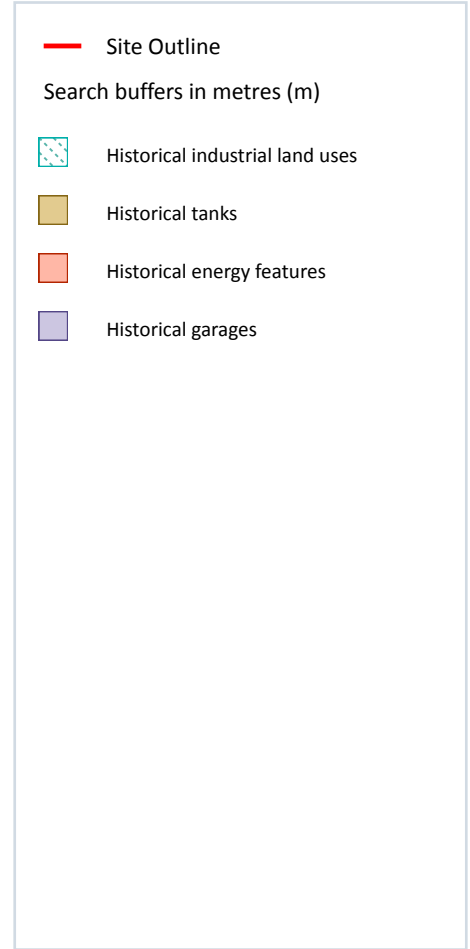
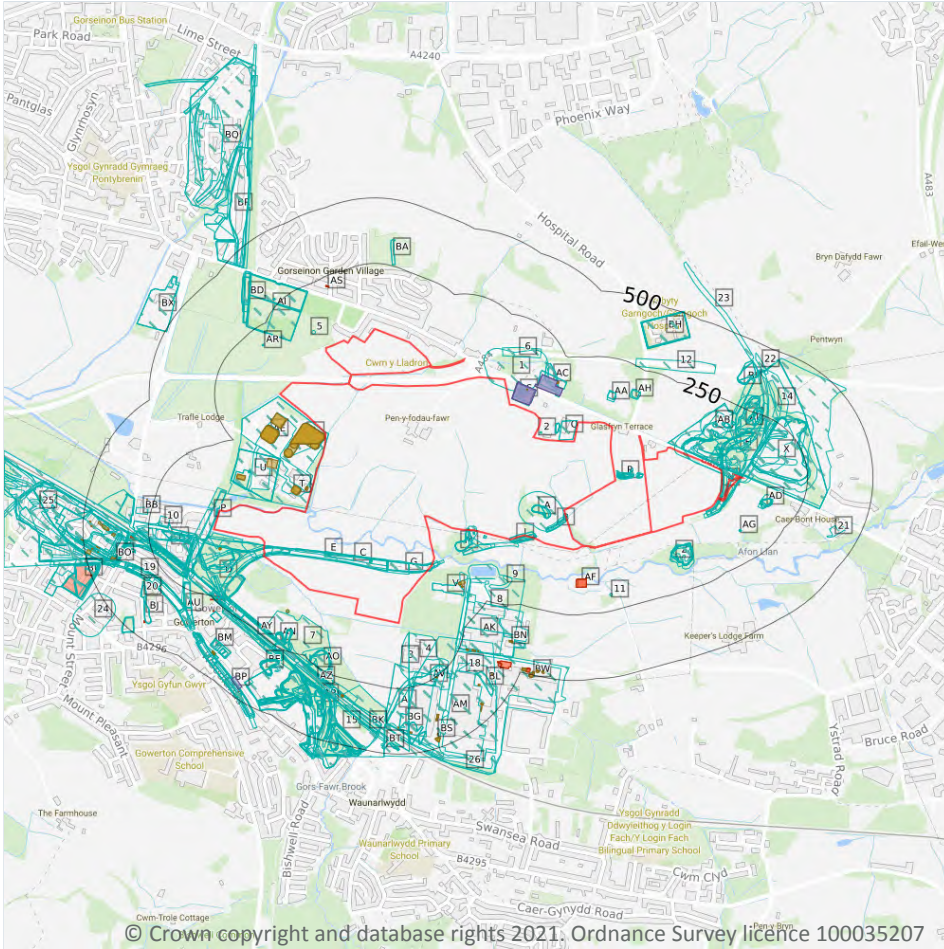
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



2.1 Historical industrial land uses

| | |
|---------------------|------------|
| Records within 500m | 653 |
|---------------------|------------|

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 37**

| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------|------|----------|
| 1 | On site | Disused Colliery | 1878 | 322641 |
| A | On site | Unspecified Old Shaft | 1913 | 337696 |
| A | On site | Unspecified Heap | 1994 | 367228 |

| ID | Location | Land Use | Date | Group ID |
|----|----------|-------------------------|------|----------|
| A | On site | Unspecified Heap | 1964 | 366385 |
| A | On site | Unspecified Heap | 1936 | 364088 |
| A | On site | Unspecified Heap | 1947 | 366385 |
| A | On site | Unspecified Heap | 1980 | 367228 |
| A | On site | Unspecified Heap | 1968 | 367228 |
| A | On site | Unspecified Heap | 1938 | 349329 |
| A | On site | Unspecified Heap | 1938 | 352466 |
| B | On site | Old Coal Pit | 1913 | 321371 |
| B | On site | Unspecified Pit | 1897 | 335487 |
| B | On site | Unspecified Pits | 1936 | 356939 |
| B | On site | Unspecified Pits | 1938 | 342286 |
| B | On site | Unspecified Pits | 1938 | 342286 |
| C | On site | Mineral Railway Sidings | 1900 | 339236 |
| C | On site | Railway Sidings | 1936 | 370372 |
| D | On site | Mineral Railway Sidings | 1900 | 362597 |
| D | On site | Tin Plate Works | 1900 | 352463 |
| D | On site | Tin Plate Works | 1948 | 364620 |
| D | On site | Tin Plate Works | 1913 | 380083 |
| D | On site | Tin Plate Works | 1905 | 343245 |
| E | On site | Railway Building | 1900 | 339964 |
| E | On site | Railway Buildings | 1948 | 319075 |
| E | On site | Railway Building | 1913 | 374270 |
| E | On site | Mineral Railway Sidings | 1905 | 342935 |
| E | On site | Railway Building | 1905 | 374270 |
| E | On site | Railway Building | 1938 | 323421 |
| F | On site | Railway Building | 1900 | 373560 |
| F | On site | Railway Building | 1948 | 352233 |
| F | On site | Railway Building | 1913 | 373560 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| F | On site | Railway Building | 1905 | 373560 |
| F | On site | Railway Building | 1938 | 352233 |
| G | On site | Mineral Railway Sidings | 1913 | 355057 |
| G | On site | Mineral Railway Sidings | 1964 | 352030 |
| G | On site | Railway Sidings | 1936 | 337507 |
| G | On site | Mineral Railway Sidings | 1947 | 347038 |
| G | On site | Mineral Railway Sidings | 1938 | 347038 |
| H | On site | Mineral Railway Sidings | 1897 | 359838 |
| H | On site | Colliery | 1947 | 349362 |
| H | On site | Coal Pit | 1878 | 320463 |
| H | On site | Mineral Railway Sidings | 1936 | 369363 |
| H | On site | Railway Sidings | 1947 | 379791 |
| H | On site | Mineral Railway Sidings | 1968 | 362574 |
| H | On site | Mineral Railway Sidings | 1938 | 352782 |
| H | On site | Colliery | 1913 | 365698 |
| I | On site | Unspecified Ground Workings | 1897 | 354634 |
| I | On site | Unspecified Heap | 1913 | 375066 |
| I | On site | Cuttings | 1878 | 336891 |
| I | On site | Unspecified Heap | 1936 | 370751 |
| I | On site | Unspecified Ground Workings | 1947 | 376461 |
| I | On site | Unspecified Heap | 1938 | 376081 |
| I | On site | Unspecified Heap | 1938 | 376081 |
| J | On site | Railway Sidings | 1948 | 371264 |
| J | On site | Mineral Railway Sidings | 1913 | 355057 |
| J | On site | Mineral Railway Sidings | 1938 | 352030 |
| K | On site | Mineral Railway Sidings | 1905 | 362597 |
| L | On site | Unspecified Tanks | 1992 | 360388 |
| L | On site | Sewage Works | 1992 | 366351 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------------|------|----------|
| L | On site | Unspecified Tanks | 1988 | 360388 |
| L | On site | Sewage Works | 1988 | 363287 |
| M | On site | Unspecified Heap | 1994 | 351035 |
| M | On site | Unspecified Disused Drift | 1964 | 369531 |
| M | On site | Unspecified Heap | 1936 | 348503 |
| M | On site | Unspecified Heap | 1947 | 348503 |
| M | On site | Unspecified Heap | 1980 | 351035 |
| M | On site | Unspecified Disused Drift | 1968 | 369531 |
| N | On site | Mineral Railway Sidings | 1964 | 361736 |
| N | On site | Refuse Heap | 1936 | 368935 |
| N | On site | Refuse Heap | 1947 | 364562 |
| N | On site | Refuse Heap | 1938 | 351312 |
| N | On site | Railway Building | 1938 | 323420 |
| N | On site | Refuse Heap | 1938 | 351312 |
| O | On site | Mineral Railway Sidings | 1964 | 352030 |
| L | 1m W | Unspecified Tanks | 1974 | 345574 |
| P | 1m W | Engine House | 1878 | 348853 |
| P | 3m W | Engine House | 1889 | 361447 |
| Q | 3m N | Unspecified Commercial/Industrial | 1994 | 331130 |
| Q | 3m N | Unspecified Warehouse | 1980 | 338073 |
| P | 4m W | Engine House | 1878 | 348853 |
| H | 4m N | Unspecified Disused Mine | 1964 | 343170 |
| H | 4m N | Railway Sidings | 1964 | 379791 |
| N | 5m N | Railway Building | 1938 | 323418 |
| M | 7m S | Unspecified Old Drift | 1938 | 366702 |
| M | 7m S | Unspecified Old Drift | 1938 | 366702 |
| R | 7m E | Unspecified Heap | 1964 | 351944 |
| H | 7m N | Mineral Railway Sidings | 1913 | 359838 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| M | 8m S | Unspecified Old Drift | 1936 | 360887 |
| M | 8m S | Unspecified Old Drift | 1947 | 366702 |
| R | 8m E | Unspecified Ground Workings | 1947 | 351822 |
| R | 8m W | Unspecified Heap | 1938 | 347965 |
| R | 8m W | Unspecified Heap | 1938 | 347965 |
| R | 9m W | Unspecified Heap | 1936 | 347965 |
| H | 9m N | Unspecified Ground Workings | 1913 | 378871 |
| R | 9m E | Unspecified Ground Workings | 1913 | 354642 |
| H | 9m N | Colliery | 1936 | 349362 |
| R | 9m W | Unspecified Heap | 1947 | 357108 |
| H | 9m N | Colliery | 1938 | 349362 |
| H | 9m N | Colliery | 1938 | 349362 |
| M | 10m S | Unspecified Disused Drift | 1994 | 364829 |
| M | 10m S | Unspecified Disused Drift | 1980 | 364829 |
| R | 10m E | Unspecified Heap | 1994 | 364741 |
| R | 10m E | Unspecified Heap | 1980 | 364741 |
| R | 10m E | Unspecified Heap | 1968 | 364741 |
| R | 10m W | Unspecified Heap | 1964 | 375945 |
| R | 10m E | Unspecified Ground Workings | 1897 | 363052 |
| R | 10m W | Unspecified Heap | 1968 | 358832 |
| H | 11m N | Railway Buildings | 1938 | 319077 |
| R | 11m E | Unspecified Ground Workings | 1938 | 367290 |
| R | 11m E | Unspecified Ground Workings | 1938 | 367290 |
| H | 11m NE | Unspecified Ground Workings | 1947 | 348749 |
| R | 11m E | Unspecified Heap | 1936 | 374193 |
| M | 12m S | Railway Sidings | 1947 | 353553 |
| H | 12m N | Unspecified Heaps | 1936 | 363717 |
| H | 12m NE | Unspecified Heaps | 1938 | 365221 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| H | 12m NE | Unspecified Heaps | 1938 | 365221 |
| S | 13m E | Garage | 1964 | 369573 |
| 2 | 13m SE | Coal Pit | 1897 | 320464 |
| D | 13m S | Unspecified Works | 1964 | 346174 |
| H | 13m N | Colliery | 1897 | 378307 |
| L | 14m W | Sewage Works | 1974 | 374847 |
| S | 19m E | Colliery | 1913 | 330864 |
| S | 19m E | Tramway Sidings | 1913 | 324130 |
| R | 19m W | Coal Pit | 1878 | 320462 |
| M | 21m S | Mineral Railway Sidings | 1913 | 332670 |
| D | 23m W | Tin Plate Works | 1936 | 344012 |
| Q | 28m N | Unspecified Heap | 1936 | 365089 |
| Q | 28m N | Unspecified Heap | 1947 | 365089 |
| S | 29m N | Garage | 1994 | 376334 |
| S | 29m N | Garage | 1980 | 376334 |
| S | 29m N | Garage | 1968 | 376334 |
| Q | 30m N | Unspecified Heap | 1913 | 362005 |
| M | 30m S | Unspecified Heap | 1938 | 348503 |
| M | 30m S | Unspecified Heap | 1938 | 348503 |
| Q | 31m N | Unspecified Heap | 1938 | 365089 |
| Q | 31m N | Unspecified Heap | 1938 | 365089 |
| H | 33m N | Unspecified Heap | 1897 | 326967 |
| D | 34m W | Railway Sidings | 1936 | 372731 |
| M | 36m S | Railway Sidings | 1938 | 353553 |
| D | 37m SW | Tin Plate Works | 1938 | 344012 |
| H | 38m N | Unspecified Ground Workings | 1994 | 346121 |
| H | 38m N | Unspecified Ground Workings | 1980 | 346121 |
| H | 38m N | Unspecified Ground Workings | 1968 | 346121 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|--------------------------|------|----------|
| T | 38m W | Unspecified Tanks | 1992 | 352884 |
| T | 38m W | Unspecified Tanks | 1988 | 352884 |
| T | 38m W | Unspecified Tanks | 1974 | 352884 |
| H | 38m NE | Unspecified Shaft | 1878 | 322448 |
| U | 42m N | Sewage Works | 1948 | 348424 |
| U | 42m N | Sewage Works | 1938 | 361975 |
| U | 42m N | Sewage Works | 1938 | 361975 |
| S | 42m E | Refuse Heap | 1947 | 338796 |
| S | 43m E | Gravel Pit | 1938 | 328653 |
| R | 44m W | Engine House | 1878 | 320393 |
| U | 44m N | Corporation Sewage Works | 1936 | 326341 |
| V | 47m SE | Sludge Beds | 1994 | 360261 |
| V | 47m SE | Sludge Beds | 1980 | 360261 |
| H | 49m NE | Cuttings | 1936 | 375514 |
| R | 51m W | Unspecified Shaft | 1878 | 322445 |
| H | 52m NE | Cuttings | 1968 | 352237 |
| H | 52m NE | Unspecified Pit | 1994 | 362872 |
| H | 52m NE | Unspecified Pit | 1980 | 362872 |
| 3 | 53m SE | Refuse Heap | 1992 | 367553 |
| 4 | 54m SE | Refuse Heap | 1994 | 367553 |
| H | 55m NE | Engine House | 1878 | 320392 |
| D | 60m S | Unspecified Disused Tip | 1992 | 363397 |
| D | 60m S | Unspecified Disused Tip | 1988 | 363397 |
| H | 60m NE | Cuttings | 1964 | 352237 |
| U | 60m N | Unspecified Works | 1964 | 320876 |
| U | 60m N | Sewage Works | 1967 | 378674 |
| X | 62m NE | Refuse Heap | 1947 | 375368 |
| X | 62m NE | Refuse Heap | 1936 | 360742 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| H | 65m NE | Refuse Heap | 1938 | 339694 |
| H | 65m NE | Refuse Heap | 1938 | 339694 |
| X | 67m NE | Unspecified Heaps | 1964 | 322256 |
| X | 68m NE | Refuse Heap | 1938 | 355651 |
| X | 68m NE | Refuse Heap | 1938 | 355651 |
| X | 70m NE | Unspecified Disused Mine | 1968 | 343170 |
| 5 | 70m NW | Unspecified Pit | 1878 | 335489 |
| Y | 70m SW | Iron Foundry | 1913 | 351170 |
| Y | 70m SW | Iron Foundry | 1905 | 351170 |
| Y | 71m W | Corn Mill | 1878 | 377276 |
| Z | 73m S | Unspecified Ground Workings | 1897 | 333527 |
| H | 74m NE | Cuttings | 1938 | 375514 |
| Z | 75m S | Unspecified Heap | 1994 | 340272 |
| Z | 75m S | Unspecified Heap | 1980 | 340272 |
| Y | 77m SW | Corn Mill | 1878 | 377276 |
| D | 77m S | Unspecified Works | 1967 | 346174 |
| Z | 78m S | Unspecified Heap | 1964 | 340803 |
| Z | 79m S | Unspecified Heap | 1913 | 351229 |
| H | 80m NE | Unspecified Ground Workings | 1913 | 333636 |
| Z | 81m S | Unspecified Heap | 1936 | 351229 |
| Z | 81m S | Unspecified Heap | 1947 | 362221 |
| Y | 83m SW | Unspecified Works | 1974 | 320880 |
| Z | 83m S | Unspecified Heap | 1938 | 378700 |
| Z | 83m S | Unspecified Heap | 1938 | 378700 |
| H | 84m NE | Unspecified Heap | 1897 | 326968 |
| AA | 87m N | Unspecified Ground Workings | 1913 | 333530 |
| Z | 88m S | Disused Colliery | 1878 | 322642 |
| 6 | 89m N | Cuttings | 1994 | 336889 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------------|------|----------|
| AB | 89m NE | Unspecified Shaft | 1936 | 356341 |
| Y | 90m SW | Unspecified Heap | 1974 | 366212 |
| Y | 92m W | Unspecified Ground Workings | 1936 | 376604 |
| Y | 94m W | Unspecified Heap | 1948 | 368174 |
| Y | 94m W | Unspecified Heap | 1938 | 361056 |
| Y | 94m W | Unspecified Heap | 1938 | 361056 |
| AA | 95m N | Unspecified Works | 1994 | 375564 |
| AA | 95m N | Unspecified Works | 1980 | 375564 |
| Y | 100m SW | Iron Foundry | 1900 | 373460 |
| 7 | 102m S | Colliery | 1913 | 330846 |
| Y | 103m SW | Corn Mill | 1889 | 341063 |
| Y | 104m SW | Unspecified Industrial/Commercial | 1936 | 320563 |
| AC | 105m NE | Unspecified Heap | 1878 | 326969 |
| Y | 107m SW | Unspecified Heap | 1913 | 326887 |
| 8 | 109m S | Unspecified Works | 1968 | 362328 |
| AC | 110m NE | Garage | 1994 | 350835 |
| AC | 110m NE | Garage | 1980 | 350835 |
| AD | 110m SE | Colliery | 1913 | 330865 |
| V | 110m E | Refuse Heap | 1980 | 338759 |
| AD | 113m SE | Unspecified Heap | 1913 | 354063 |
| O | 113m SW | Unspecified Tank | 1938 | 319913 |
| AD | 113m SE | Unspecified Heap | 1936 | 348808 |
| AD | 113m SE | Unspecified Heap | 1947 | 359313 |
| AE | 113m SW | Unspecified Tanks | 1992 | 376454 |
| AE | 113m SW | Unspecified Tanks | 1988 | 376454 |
| AE | 113m SW | Unspecified Tanks | 1974 | 376454 |
| AD | 114m SE | Unspecified Heap | 1994 | 346690 |
| AD | 114m SE | Unspecified Heap | 1980 | 346690 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| AD | 114m SE | Unspecified Heap | 1968 | 346690 |
| AC | 114m NE | Unspecified Quarry | 1897 | 374585 |
| AD | 114m SE | Unspecified Heap | 1938 | 374623 |
| AD | 114m SE | Unspecified Heap | 1938 | 374623 |
| Y | 116m W | Unspecified Ground Workings | 1913 | 376299 |
| AD | 116m SE | Unspecified Heap | 1964 | 342926 |
| AC | 121m NE | Unspecified Quarry | 1913 | 374585 |
| V | 121m SE | Unspecified Tank | 1964 | 379478 |
| H | 122m NE | Unspecified Pit | 1994 | 340913 |
| H | 122m NE | Unspecified Pit | 1980 | 340913 |
| H | 122m NE | Unspecified Pit | 1968 | 340913 |
| V | 122m SE | Unspecified Tank | 1968 | 379478 |
| U | 126m N | Pump House | 1948 | 369470 |
| U | 126m N | Pump House | 1938 | 345388 |
| AG | 127m SE | Old Coal Pit | 1913 | 321370 |
| U | 128m N | Pump House | 1936 | 346090 |
| AG | 128m SE | Unspecified Old Pit | 1947 | 339482 |
| AG | 128m SE | Unspecified Old Pit | 1936 | 339482 |
| AG | 129m SE | Unspecified Old Pit | 1938 | 339482 |
| AG | 129m SE | Unspecified Old Pit | 1938 | 339482 |
| AH | 135m NE | Unspecified Ground Workings | 1913 | 333529 |
| AI | 136m W | Cemetery | 1992 | 345255 |
| AI | 136m W | Cemetery | 1988 | 345255 |
| AI | 136m W | Cemetery | 1974 | 345255 |
| AI | 138m W | Cemetery | 1967 | 345255 |
| AB | 138m NE | Unspecified Shaft | 1938 | 367663 |
| AB | 138m NE | Unspecified Shaft | 1938 | 367663 |
| AJ | 139m NE | Refuse Heaps | 1936 | 349815 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------------|------|----------|
| 9 | 140m S | Gravel Pit | 1968 | 328651 |
| AH | 141m NE | Unspecified Works | 1994 | 357727 |
| AH | 141m NE | Unspecified Works | 1980 | 357727 |
| AJ | 143m NE | Refuse Heaps | 1938 | 339868 |
| AJ | 143m NE | Refuse Heaps | 1938 | 339868 |
| AK | 147m E | Unspecified Works | 1964 | 378118 |
| AB | 153m NE | Unspecified Shaft | 1947 | 353247 |
| AB | 155m NE | Refuse Heap | 1936 | 378027 |
| AB | 156m NE | Refuse Heap | 1938 | 371286 |
| AB | 156m NE | Refuse Heap | 1938 | 371286 |
| AL | 156m S | Unspecified Works | 1988 | 339374 |
| AL | 156m S | Unspecified Works | 1974 | 372920 |
| AB | 158m NE | Unspecified Disused Shaft | 1994 | 340330 |
| AB | 158m NE | Unspecified Disused Shaft | 1980 | 340330 |
| AM | 159m SE | Metal Works | 1947 | 318672 |
| AK | 160m E | Unspecified Commercial/Industrial | 1994 | 331129 |
| AN | 166m SW | Unspecified Heap | 1948 | 357232 |
| AN | 166m SW | Unspecified Heap | 1913 | 373010 |
| AI | 166m NW | Cemetery | 1964 | 379548 |
| AI | 168m NW | Cemetery | 1936 | 351257 |
| AO | 168m SW | Unspecified Slant | 1913 | 337786 |
| AP | 169m S | Railway Sidings | 1878 | 368751 |
| AI | 170m NW | Cemetery | 1938 | 351257 |
| AN | 171m SW | Unspecified Heap | 1992 | 368369 |
| AN | 171m SW | Unspecified Heap | 1988 | 368369 |
| AN | 171m SW | Unspecified Heap | 1974 | 368369 |
| AN | 172m SW | Unspecified Heap | 1936 | 367059 |
| AI | 172m NW | Cemetery | 1948 | 350722 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|--------------------------|------|----------|
| AI | 172m NW | Burial Ground | 1913 | 331045 |
| AN | 173m SW | Unspecified Heap | 1964 | 364060 |
| AN | 173m SW | Unspecified Heap | 1967 | 368369 |
| AN | 174m SW | Unspecified Heap | 1938 | 343381 |
| AN | 174m SW | Unspecified Heap | 1938 | 343381 |
| 10 | 174m W | Unspecified Disused Mill | 1913 | 329056 |
| AM | 175m SE | Unspecified Works | 1964 | 368204 |
| AQ | 176m S | Railway Sidings | 1889 | 354942 |
| AB | 177m NE | Drift | 1936 | 371114 |
| AB | 177m NE | Drift | 1947 | 369186 |
| AK | 177m SE | Unspecified Factory | 1980 | 320633 |
| AB | 178m NE | Unspecified Drift | 1938 | 326299 |
| Y | 178m SW | Mineral Railway Sidings | 1905 | 357952 |
| AR | 178m NW | Old Coal Pit | 1905 | 366944 |
| AQ | 179m S | Railway Sidings | 1878 | 348315 |
| AR | 179m NW | Old Coal Pit | 1900 | 366944 |
| Y | 181m SW | Cuttings | 1913 | 347441 |
| Y | 181m SW | Mineral Railway Sidings | 1913 | 349088 |
| Y | 181m SW | Cuttings | 1992 | 358569 |
| Y | 181m SW | Cuttings | 1988 | 358569 |
| Y | 181m SW | Cuttings | 1974 | 358569 |
| Y | 182m SW | Cuttings | 1889 | 346002 |
| AO | 183m SW | Unspecified Heap | 1948 | 372899 |
| Y | 183m SW | Railway Sidings | 1938 | 371953 |
| Y | 183m SW | Cuttings | 1938 | 346740 |
| Y | 183m SW | Cuttings | 1878 | 346002 |
| Y | 183m SW | Cuttings | 1948 | 363074 |
| Y | 183m SW | Cuttings | 1878 | 353035 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| AO | 183m SW | Unspecified Ground Workings | 1988 | 360242 |
| AO | 183m SW | Unspecified Ground Workings | 1974 | 360242 |
| AO | 184m SW | Unspecified Heap | 1936 | 354315 |
| AQ | 184m SW | Cuttings | 1913 | 371289 |
| AQ | 184m S | Railway Sidings | 1948 | 377173 |
| 11 | 185m S | Unspecified Tank | 1964 | 319910 |
| AO | 185m SW | Unspecified Heap | 1938 | 372899 |
| AO | 185m SW | Unspecified Heap | 1938 | 372899 |
| Y | 185m SW | Cuttings | 1964 | 358569 |
| Y | 185m SW | Cuttings | 1967 | 358569 |
| AQ | 187m SW | Cuttings | 1948 | 343359 |
| AO | 187m SW | Unspecified Heap | 1992 | 357379 |
| AQ | 187m SW | Cuttings | 1938 | 353434 |
| H | 188m NE | Unspecified Heap | 1897 | 326970 |
| Y | 189m SW | Railway Sidings | 1948 | 358781 |
| Y | 189m SW | Railway Sidings | 1948 | 371953 |
| Y | 193m SW | Mineral Railway Sidings | 1900 | 360758 |
| Y | 195m SW | Railway Sidings | 1936 | 364054 |
| AJ | 201m N | Unspecified Heap | 1964 | 326966 |
| AJ | 202m N | Unspecified Disused Drift | 1994 | 355324 |
| AJ | 202m N | Unspecified Disused Drift | 1980 | 355324 |
| AJ | 202m N | Unspecified Ground Workings | 1968 | 333633 |
| Y | 208m SW | Cuttings | 1948 | 342042 |
| K | 208m SW | Railway Sidings | 1936 | 373303 |
| AT | 211m SE | Unspecified Works | 1980 | 339373 |
| AU | 213m SW | Cuttings | 1936 | 379206 |
| AV | 214m S | Gravel Pit | 1968 | 328652 |
| AN | 214m SW | Railway Sidings | 1900 | 371458 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-------------------|------|----------|
| AV | 215m S | Refuse Heap | 1964 | 363508 |
| AL | 216m S | Refuse Heap | 1988 | 344288 |
| AL | 216m S | Refuse Heap | 1974 | 373502 |
| Y | 219m W | Railway Sidings | 1964 | 371904 |
| Y | 219m W | Railway Sidings | 1967 | 356858 |
| AW | 221m SE | Railway Sidings | 1947 | 378009 |
| AX | 222m SW | Cuttings | 1948 | 359307 |
| AX | 222m SW | Cuttings | 1913 | 369239 |
| AX | 223m SW | Cuttings | 1938 | 363977 |
| AQ | 225m SW | Cuttings | 1913 | 336885 |
| AY | 225m SW | Cuttings | 1889 | 366327 |
| AY | 226m SW | Cuttings | 1878 | 379303 |
| AY | 226m SW | Cuttings | 1878 | 379303 |
| AX | 228m SW | Railway Sidings | 1878 | 362226 |
| AZ | 231m SW | Railway Sidings | 1967 | 368751 |
| AN | 231m SW | Railway Building | 1905 | 323432 |
| AT | 233m S | Unspecified Works | 1994 | 339316 |
| Y | 236m W | Cuttings | 1878 | 354925 |
| AQ | 237m SW | Railway Station | 1992 | 374228 |
| AQ | 237m SW | Railway Station | 1988 | 374228 |
| AQ | 237m SW | Railway Station | 1974 | 374228 |
| AQ | 237m SW | Railway Station | 1900 | 363115 |
| AQ | 237m SW | Railway Sidings | 1936 | 372124 |
| AW | 237m S | Unspecified Works | 1968 | 357417 |
| Y | 237m W | Cuttings | 1889 | 361322 |
| AQ | 237m SW | Railway Building | 1900 | 344958 |
| AQ | 237m SW | Railway Station | 1889 | 360428 |
| AQ | 237m SW | Railway Station | 1964 | 349841 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| AQ | 237m SW | Railway Station | 1967 | 349841 |
| AY | 239m SW | Railway Sidings | 1936 | 367635 |
| AQ | 240m SW | Railway Station | 1913 | 374229 |
| AQ | 240m SW | Railway Station | 1905 | 374229 |
| AQ | 240m SW | Railway Station | 1878 | 365773 |
| AQ | 240m SW | Railway Building | 1913 | 344958 |
| AQ | 240m SW | Railway Building | 1905 | 344958 |
| AQ | 241m SW | Railway Station | 1878 | 365773 |
| AQ | 242m SW | Railway Station | 1948 | 340666 |
| AQ | 242m SW | Railway Station | 1938 | 340666 |
| AQ | 244m SW | Railway Building | 1913 | 323429 |
| AQ | 244m SW | Railway Buildings | 1948 | 359628 |
| AK | 245m SE | Unspecified Works | 1968 | 362328 |
| AQ | 245m SW | Railway Buildings | 1938 | 359628 |
| 12 | 247m NE | Cuttings | 1994 | 336890 |
| AN | 247m S | Railway Building | 1878 | 323431 |
| AN | 251m SW | Railway Sidings | 1889 | 351119 |
| AQ | 252m SW | Railway Building | 1964 | 323430 |
| 13 | 253m SW | Railway Sidings | 1936 | 342244 |
| BA | 255m N | Unspecified Ground Workings | 1992 | 348991 |
| BA | 255m N | Unspecified Ground Workings | 1988 | 348991 |
| AN | 258m SW | Railway Building | 1936 | 359976 |
| Y | 258m W | Cuttings | 1878 | 349694 |
| AN | 260m SW | Railway Buildings | 1938 | 355844 |
| 14 | 260m NE | Unspecified Ground Workings | 1913 | 333632 |
| BB | 260m W | Disused Chemical Works | 1905 | 337992 |
| AN | 260m SW | Railway Buildings | 1948 | 355844 |
| 15 | 263m S | Colliery | 1878 | 379571 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|--------------------|------|----------|
| AN | 264m SW | Railway Building | 1964 | 342651 |
| AN | 264m SW | Railway Building | 1913 | 323355 |
| AY | 266m SW | Cattle Pens | 1936 | 331095 |
| AI | 268m NW | Old Coal Pit | 1905 | 364707 |
| AN | 268m SW | Unspecified Heap | 1913 | 326877 |
| AI | 270m NW | Old Coal Pit | 1900 | 364707 |
| AP | 275m S | Colliery | 1889 | 379571 |
| AP | 277m S | Disused Colliery | 1900 | 353217 |
| Y | 277m W | Unspecified Heap | 1913 | 326886 |
| AU | 279m SW | Cuttings | 1948 | 358879 |
| AU | 279m SW | Cuttings | 1913 | 364682 |
| AP | 279m S | Disused Colliery | 1905 | 353217 |
| AU | 279m SW | Cuttings | 1938 | 355580 |
| AP | 279m S | Disused Colliery | 1913 | 374715 |
| AU | 280m SW | Cuttings | 1889 | 365613 |
| AU | 280m SW | Cuttings | 1992 | 362819 |
| AQ | 280m SW | Telephone Exchange | 1992 | 367980 |
| AQ | 280m SW | Telephone Exchange | 1988 | 367980 |
| AQ | 280m SW | Telephone Exchange | 1974 | 367980 |
| BD | 281m NW | Cuttings | 1878 | 352197 |
| AU | 281m SW | Cuttings | 1878 | 356761 |
| AU | 282m SW | Cuttings | 1878 | 365613 |
| AU | 283m SW | Cuttings | 1964 | 375384 |
| AU | 283m SW | Cuttings | 1967 | 375529 |
| 16 | 284m SE | Unspecified Works | 1968 | 369787 |
| BD | 285m NW | Cuttings | 1889 | 360948 |
| BD | 288m NW | Cuttings | 1878 | 345264 |
| 17 | 289m SW | Railway Sidings | 1964 | 362226 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| AP | 290m S | Railway Sidings | 1889 | 363260 |
| 18 | 291m SE | Unspecified Pit | 1964 | 335482 |
| AP | 291m S | Railway Sidings | 1878 | 368751 |
| BE | 294m SW | Unspecified Heap | 1900 | 369218 |
| BE | 295m SW | Unspecified Ground Workings | 1936 | 333511 |
| BE | 295m SW | Unspecified Heap | 1948 | 362704 |
| BE | 295m SW | Unspecified Heap | 1913 | 374249 |
| BE | 295m SW | Unspecified Heap | 1905 | 374249 |
| BE | 298m SW | Unspecified Heap | 1938 | 379447 |
| BE | 298m SW | Unspecified Heap | 1938 | 357704 |
| AP | 298m SW | Colliery | 1878 | 379571 |
| BE | 299m SW | Unspecified Heap | 1992 | 347795 |
| BE | 299m SW | Unspecified Heap | 1988 | 347795 |
| BE | 299m SW | Unspecified Heap | 1974 | 347795 |
| BE | 300m SW | Unspecified Heap | 1964 | 353107 |
| BE | 300m SW | Unspecified Heap | 1967 | 353107 |
| 19 | 305m SW | Railway Sidings | 1936 | 369360 |
| AP | 306m SW | Railway Building | 1948 | 348619 |
| AP | 308m SW | Railway Building | 1938 | 348619 |
| AP | 309m S | Unspecified Ground Workings | 1900 | 365648 |
| AZ | 309m S | Railway Building | 1938 | 351513 |
| AZ | 309m S | Railway Building | 1948 | 351513 |
| AZ | 309m S | Unspecified Tank | 1913 | 319911 |
| Y | 311m W | Unspecified Heap | 1948 | 365024 |
| Y | 312m W | Unspecified Heap | 1936 | 343438 |
| AP | 312m S | Unspecified Heaps | 1948 | 350946 |
| AP | 312m S | Unspecified Heaps | 1913 | 377963 |
| AP | 312m S | Unspecified Heaps | 1905 | 377963 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| Y | 312m W | Unspecified Heap | 1938 | 347145 |
| Y | 312m W | Unspecified Heap | 1938 | 347145 |
| AP | 312m SW | Unspecified Ground Workings | 1938 | 339246 |
| AP | 312m SW | Unspecified Ground Workings | 1938 | 339245 |
| AP | 313m SW | Unspecified Ground Workings | 1936 | 344382 |
| AP | 313m SW | Unspecified Heap | 1974 | 340932 |
| BF | 313m W | Disused Chemical Works | 1878 | 343177 |
| AP | 314m SW | Unspecified Heaps | 1992 | 341965 |
| AP | 314m SW | Unspecified Heaps | 1988 | 341965 |
| AZ | 314m S | Unspecified Tank | 1936 | 358838 |
| AZ | 314m S | Unspecified Tank | 1938 | 358838 |
| AP | 315m SW | Unspecified Heap | 1964 | 373970 |
| AP | 315m SW | Unspecified Heap | 1967 | 373970 |
| BF | 315m W | Disused Chemical Works | 1889 | 366983 |
| AZ | 316m S | Unspecified Tank | 1948 | 349351 |
| AZ | 316m S | Unspecified Tank | 1913 | 368565 |
| BF | 316m W | Disused Chemical Works | 1878 | 363520 |
| BF | 318m W | Disused Chemical Works | 1900 | 374811 |
| Y | 321m W | Railway Sidings | 1936 | 339861 |
| Y | 321m W | Steel Works | 1936 | 358839 |
| BD | 321m NW | Cuttings | 1913 | 368941 |
| Y | 323m W | Steel Works | 1900 | 378411 |
| Y | 323m W | Steel Works | 1905 | 363366 |
| AP | 323m SW | Unspecified Heaps | 1948 | 363995 |
| AP | 323m SW | Unspecified Heaps | 1913 | 359209 |
| BG | 324m S | Unspecified Works | 1992 | 339317 |
| Y | 324m W | Disused Steel Works | 1878 | 366274 |
| Y | 325m W | Steel Works | 1913 | 363366 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| Y | 325m W | Disused Steel Works | 1889 | 341712 |
| AP | 326m SW | Unspecified Ground Workings | 1936 | 339247 |
| Y | 327m W | Unspecified Works | 1964 | 352267 |
| Y | 327m W | Steel Works | 1938 | 371380 |
| Y | 327m W | Steel Works | 1948 | 371380 |
| Y | 327m W | Disused Steel Works | 1878 | 366274 |
| AP | 327m S | Unspecified Ground Workings | 1900 | 373037 |
| BH | 327m NE | Hospital | 1964 | 341177 |
| BH | 328m NE | Hospital | 1994 | 344260 |
| BH | 328m NE | Hospital | 1980 | 344260 |
| BH | 328m NE | Hospital | 1968 | 344260 |
| AP | 328m S | Unspecified Disused Tip | 1988 | 332844 |
| Y | 328m W | Unspecified Works | 1974 | 345499 |
| AP | 329m S | Unspecified Heaps | 1905 | 371941 |
| Y | 330m W | Unspecified Works | 1967 | 345499 |
| BI | 330m NE | Unspecified Heap | 1964 | 364058 |
| BH | 332m NE | Isolation Hospital | 1936 | 342104 |
| BH | 332m NE | Isolation Hospital | 1947 | 372277 |
| BI | 333m NE | Unspecified Heap | 1994 | 349386 |
| BI | 333m NE | Unspecified Heap | 1980 | 349386 |
| BH | 333m NE | Isolation Hospital | 1913 | 343222 |
| BJ | 333m SW | Unspecified Heaps | 1889 | 347797 |
| AP | 333m S | Unspecified Heap | 1974 | 340956 |
| BH | 333m NE | Isolation Hospital | 1938 | 340257 |
| AP | 334m S | Unspecified Ground Workings | 1964 | 369613 |
| AP | 334m S | Unspecified Heap | 1967 | 370127 |
| BI | 334m NE | Unspecified Ground Workings | 1913 | 346771 |
| BI | 334m NE | Unspecified Ground Workings | 1947 | 379583 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| BG | 334m S | Unspecified Works | 1967 | 368204 |
| BJ | 335m SW | Unspecified Heaps | 1878 | 347797 |
| BI | 335m NE | Unspecified Heaps | 1938 | 347503 |
| BI | 335m NE | Unspecified Heaps | 1938 | 347503 |
| BI | 335m NE | Unspecified Heap | 1936 | 342318 |
| AP | 336m S | Unspecified Heap | 1878 | 357870 |
| BD | 340m NW | Cuttings | 1974 | 364936 |
| ZO | 341m SW | Unspecified Heap | 1878 | 326878 |
| BD | 341m NW | Cuttings | 1964 | 364978 |
| BD | 341m NW | Cuttings | 1967 | 364978 |
| Y | 346m W | Railway Sidings | 1878 | 348319 |
| BK | 347m S | Railway Sidings | 1878 | 379187 |
| AP | 348m SW | Unspecified Heap | 1878 | 339679 |
| AP | 349m SW | Unspecified Heap | 1889 | 365674 |
| Y | 349m W | Railway Sidings | 1878 | 348319 |
| Y | 350m W | Boiler | 1889 | 320450 |
| BL | 351m SE | Refuse Heap | 1964 | 338751 |
| Y | 354m W | Railway Sidings | 1889 | 359935 |
| BL | 356m SE | Gravel Pit | 1968 | 328650 |
| AP | 357m S | Unspecified Tanks | 1889 | 342689 |
| AP | 357m S | Unspecified Tanks | 1878 | 342689 |
| AP | 357m S | Unspecified Tank | 1878 | 319916 |
| AP | 357m SW | Unspecified Heap | 1878 | 356566 |
| AP | 357m SW | Unspecified Ground Workings | 1889 | 341118 |
| AP | 359m SW | Unspecified Heap | 1878 | 356566 |
| BM | 360m SW | Police Station | 1905 | 356977 |
| BM | 364m SW | Police Station | 1936 | 351928 |
| BM | 365m SW | Police Station | 1900 | 372874 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-------------------|------|----------|
| BM | 366m SW | Police Station | 1938 | 344731 |
| BM | 366m SW | Police Station | 1948 | 368235 |
| Y | 367m W | Refuse Heap | 1913 | 338760 |
| BM | 368m SW | Police Station | 1913 | 375477 |
| AP | 368m S | Unspecified Heap | 1889 | 357870 |
| AP | 373m S | Unspecified Tank | 1878 | 319902 |
| BM | 376m SW | Police Station | 1992 | 362498 |
| BM | 377m SW | Police Station | 1988 | 365234 |
| BM | 377m SW | Police Station | 1974 | 365234 |
| Y | 378m W | Unspecified Tank | 1974 | 368985 |
| BK | 378m S | Unspecified Pit | 1974 | 335481 |
| BM | 378m SW | Police Station | 1964 | 379901 |
| BM | 378m SW | Police Station | 1967 | 379901 |
| BG | 380m S | Unspecified Heaps | 1938 | 353878 |
| BG | 380m S | Unspecified Heaps | 1938 | 353878 |
| BJ | 380m SW | Unspecified Heap | 1878 | 326879 |
| BG | 381m S | Unspecified Heap | 1936 | 326875 |
| BM | 382m S | Railway Building | 1938 | 353984 |
| BM | 382m S | Railway Building | 1948 | 353984 |
| BM | 383m SW | Railway Station | 1889 | 346075 |
| BM | 383m SW | Railway Station | 1900 | 363029 |
| Y | 384m W | Unspecified Tank | 1938 | 346018 |
| BM | 385m SW | Railway Station | 1905 | 366406 |
| BM | 385m SW | Railway Station | 1878 | 373965 |
| BM | 385m SW | Railway Station | 1878 | 373965 |
| BM | 385m SW | Railway Station | 1936 | 341028 |
| BM | 385m SW | Railway Station | 1913 | 361317 |
| BM | 385m SW | Railway Station | 1938 | 360075 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| BM | 386m SW | Railway Station | 1948 | 360075 |
| AP | 387m SW | Cuttings | 1889 | 366284 |
| 21 | 387m SE | Unspecified Factory | 1897 | 320635 |
| AP | 387m SW | Cuttings | 1878 | 366284 |
| BG | 387m S | Railway Sidings | 1974 | 349828 |
| AP | 388m SW | Cuttings | 1878 | 342709 |
| AP | 389m SW | Unspecified Tank | 1889 | 319914 |
| BM | 390m SW | Railway Station | 1964 | 360075 |
| BM | 393m SW | Cuttings | 1889 | 363381 |
| BM | 394m SW | Cuttings | 1878 | 370848 |
| BM | 395m SW | Cuttings | 1878 | 366395 |
| BM | 396m SW | Cuttings | 1913 | 370289 |
| AP | 398m S | Unspecified Tank | 1878 | 319915 |
| 22 | 399m N | Unspecified Pit | 1913 | 335488 |
| BM | 407m SW | Railway Building | 1938 | 368871 |
| BM | 408m SW | Railway Building | 1948 | 368871 |
| BM | 408m SW | Unspecified Tank | 1913 | 319917 |
| Y | 409m W | Unspecified Tank | 1936 | 319912 |
| BM | 410m SW | Railway Buildings | 1905 | 319060 |
| BM | 416m SW | Railway Building | 1948 | 323356 |
| AP | 419m SW | Smithy | 1889 | 369518 |
| AP | 419m SW | Smithy | 1878 | 356066 |
| Y | 421m W | Unspecified Ground Workings | 1878 | 333531 |
| BM | 421m SW | Cuttings | 1938 | 347533 |
| BM | 422m SW | Cuttings | 1948 | 347533 |
| AP | 422m SW | Smithy | 1878 | 369518 |
| BP | 422m SW | Railway Sidings | 1900 | 365433 |
| BP | 424m SW | Railway Sidings | 1905 | 376050 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-------------------|------|----------|
| BG | 425m S | Unspecified Pit | 1938 | 349818 |
| BG | 425m S | Unspecified Pit | 1938 | 349818 |
| AP | 427m S | Unspecified Heap | 1878 | 356074 |
| BP | 427m SW | Railway Sidings | 1936 | 370018 |
| BG | 428m S | Unspecified Pit | 1936 | 379996 |
| 23 | 428m NE | Cuttings | 1913 | 336888 |
| BQ | 428m NW | Unspecified Works | 1964 | 379815 |
| BP | 430m SW | Railway Sidings | 1948 | 359028 |
| BP | 431m SW | Railway Sidings | 1913 | 364834 |
| BP | 432m SW | Railway Sidings | 1938 | 372383 |
| AP | 432m S | Unspecified Heap | 1889 | 371395 |
| AP | 433m S | Unspecified Heap | 1878 | 371395 |
| BQ | 441m NW | Railway Sidings | 1938 | 343637 |
| BR | 441m NW | Abattoir | 1938 | 338022 |
| BQ | 442m NW | Steel Works | 1948 | 345471 |
| BQ | 442m NW | Railway Sidings | 1948 | 369809 |
| BR | 442m NW | Tin Plate Works | 1948 | 361584 |
| BR | 442m NW | Tin Plate Works | 1913 | 368831 |
| AP | 446m S | Unspecified Pit | 1974 | 335480 |
| BT | 447m S | Furnace | 1878 | 321756 |
| Y | 449m W | Chimneys | 1967 | 375938 |
| Y | 449m W | Chimneys | 1974 | 375938 |
| BU | 452m W | Brick Field | 1889 | 368315 |
| BP | 453m SW | Railway Sidings | 1878 | 362219 |
| BQ | 453m NW | Railway Sidings | 1936 | 364464 |
| BU | 454m W | Gas Works | 1913 | 321787 |
| BU | 454m W | Brick Field | 1878 | 355110 |
| BV | 455m SW | Burial Ground | 1889 | 377779 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------------|------|----------|
| BU | 455m W | Brick Field | 1878 | 355110 |
| BV | 456m SW | Burial Ground | 1878 | 377779 |
| BV | 456m SW | Burial Ground | 1878 | 351597 |
| BU | 456m W | Unspecified Disused Works | 1974 | 326419 |
| BT | 456m S | Unspecified Heap | 1936 | 375866 |
| BU | 457m W | Unspecified Commercial/Industrial | 1948 | 369898 |
| BQ | 457m NW | Railway Sidings | 1913 | 361755 |
| BT | 457m S | Unspecified Heap | 1947 | 360380 |
| BT | 457m S | Unspecified Ground Workings | 1938 | 378405 |
| BT | 457m S | Unspecified Ground Workings | 1938 | 378405 |
| BU | 457m W | Unspecified Commercial/Industrial | 1964 | 371751 |
| BU | 457m W | Unspecified Commercial/Industrial | 1938 | 358600 |
| BU | 458m W | Unspecified Commercial/Industrial | 1936 | 379615 |
| BU | 458m W | Unspecified Works | 1992 | 371823 |
| BU | 458m W | Unspecified Works | 1988 | 371823 |
| BU | 458m W | Unspecified Works | 1967 | 366554 |
| AP | 460m S | Sawmill | 1889 | 379429 |
| AP | 460m S | Sawmill | 1878 | 362590 |
| BT | 463m S | Old Lime Kiln | 1913 | 332123 |
| AP | 464m S | Sawmill | 1878 | 379429 |
| BU | 467m W | Unspecified Kiln | 1889 | 363293 |
| BU | 467m W | Unspecified Kiln | 1878 | 377890 |
| BU | 470m W | Unspecified Kiln | 1878 | 363293 |
| 24 | 473m SW | Smithy | 1905 | 332467 |
| 25 | 477m W | Manure Works | 1938 | 364109 |
| BW | 491m S | Unspecified Tank | 1994 | 372495 |
| BW | 491m S | Unspecified Tank | 1980 | 372495 |
| BX | 495m NW | Unspecified Factory | 1992 | 364144 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| BX | 495m NW | Unspecified Factory | 1988 | 364144 |
| BX | 495m NW | Unspecified Factory | 1974 | 350801 |
| 26 | 495m S | Unspecified Ground Workings | 1964 | 333516 |
| Y | 497m W | Chimneys | 1967 | 342562 |
| Y | 498m W | Chimneys | 1974 | 342562 |
| BU | 499m W | Unspecified Kiln | 1889 | 356367 |

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

| | |
|----------------------------|------------|
| Records within 500m | 118 |
|----------------------------|------------|

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 37**

| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------|------|----------|
| L | 2m W | Tanks | 1984 | 40116 |
| L | 3m W | Tanks | 1995 | 41267 |
| L | 3m W | Tanks | 1995 | 41267 |
| L | 5m W | Tanks | 1991 | 40551 |
| L | 5m W | Tanks | 1991 | 40551 |
| T | 13m W | Tanks | 1993 | 41685 |
| T | 17m W | Tanks | 1988 | 44657 |
| T | 17m W | Tanks | 1988 | 44657 |
| L | 20m W | Tanks | 1993 | 39438 |
| L | 24m W | Unspecified Tank | 1988 | 40797 |
| L | 24m W | Unspecified Tank | 1988 | 40797 |
| T | 37m W | Tanks | 1993 | 43835 |
| T | 42m W | Tanks | 1988 | 43894 |
| T | 42m W | Tanks | 1988 | 43894 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------|------|----------|
| W | 58m SW | Tanks | 1984 | 41332 |
| W | 61m SW | Tanks | 1991 | 43415 |
| W | 61m SW | Tanks | 1991 | 43415 |
| D | 64m S | Unspecified Tank | 1958 | 41677 |
| D | 64m S | Unspecified Tank | 1965 | 41677 |
| S | 71m N | Unspecified Tank | 1946 | 37758 |
| U | 95m N | Tanks | 1965 | 39441 |
| U | 97m N | Settling Tanks | 1935 | 39841 |
| L | 97m W | Tanks | 1993 | 39437 |
| L | 100m W | Unspecified Tank | 1988 | 44129 |
| L | 100m W | Unspecified Tank | 1988 | 44129 |
| L | 108m NW | Unspecified Tank | 1988 | 41379 |
| L | 108m NW | Unspecified Tank | 1988 | 41379 |
| O | 110m SW | Unspecified Tank | 1935 | 37765 |
| AE | 115m SW | Tanks | 1984 | 41222 |
| AE | 116m SW | Tanks | 1995 | 41222 |
| AE | 116m SW | Tanks | 1995 | 41222 |
| AE | 117m SW | Tanks | 1991 | 42275 |
| AE | 117m SW | Tanks | 1991 | 42275 |
| V | 122m SE | Unspecified Tank | 1986 | 40651 |
| V | 122m SE | Unspecified Tank | 1990 | 40651 |
| V | 123m SE | Unspecified Tank | 1971 | 40651 |
| V | 123m SE | Unspecified Tank | 1958 | 40651 |
| V | 123m SE | Tanks | 1993 | 39434 |
| V | 138m SE | Unspecified Tank | 1986 | 44525 |
| V | 138m SE | Unspecified Tank | 1990 | 44525 |
| V | 140m SE | Unspecified Tank | 1971 | 43522 |
| V | 140m SE | Unspecified Tank | 1958 | 43522 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------|------|----------|
| V | 140m SE | Unspecified Tank | 1993 | 44525 |
| AC | 143m NE | Unspecified Tank | 1988 | 41364 |
| AC | 143m NE | Unspecified Tank | 1992 | 41364 |
| L | 151m N | Tanks | 1965 | 39440 |
| AV | 249m SE | Unspecified Tank | 1990 | 42404 |
| AV | 250m SE | Unspecified Tank | 1993 | 42404 |
| BB | 275m W | Unspecified Tank | 1879 | 37793 |
| BC | 276m E | Tanks | 1986 | 44263 |
| BC | 276m E | Tanks | 1990 | 44263 |
| BC | 278m E | Tanks | 1971 | 44263 |
| BC | 279m E | Tanks | 1993 | 44263 |
| BC | 299m E | Tanks | 1986 | 43608 |
| BC | 299m E | Tanks | 1990 | 43608 |
| BC | 300m E | Tanks | 1971 | 43608 |
| BC | 302m E | Tanks | 1993 | 40530 |
| AZ | 310m S | Unspecified Tank | 1935 | 44536 |
| AZ | 313m S | Unspecified Tank | 1916 | 41766 |
| AZ | 314m S | Unspecified Tank | 1958 | 44536 |
| AZ | 314m S | Unspecified Tank | 1965 | 44536 |
| BC | 319m E | Unspecified Tank | 1971 | 37759 |
| Y | 377m W | Unspecified Tank | 1965 | 37792 |
| AW | 378m SE | Tanks | 1982 | 42914 |
| AW | 378m SE | Tanks | 1971 | 42914 |
| AW | 379m SE | Tanks | 1986 | 42199 |
| BL | 383m SE | Unspecified Tank | 1986 | 41844 |
| BL | 385m SE | Unspecified Tank | 1971 | 41844 |
| BN | 385m S | Unspecified Tank | 1990 | 37761 |
| BN | 389m S | Unspecified Tank | 1993 | 37760 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------|------|----------|
| BO | 392m W | Unspecified Tank | 1916 | 37779 |
| AW | 392m S | Tanks | 1982 | 40893 |
| AW | 392m S | Tanks | 1971 | 40893 |
| AW | 393m S | Tanks | 1986 | 44289 |
| BO | 394m W | Tanks | 1935 | 39443 |
| BG | 397m S | Unspecified Tank | 1965 | 37766 |
| Y | 401m W | Unspecified Tank | 1935 | 43030 |
| Y | 401m W | Unspecified Tank | 1965 | 44508 |
| Y | 401m W | Unspecified Tank | 1958 | 44508 |
| Y | 403m W | Tanks | 1965 | 39447 |
| BL | 404m SE | Tanks | 1971 | 39423 |
| BM | 406m SW | Unspecified Tank | 1916 | 41868 |
| BM | 406m SW | Unspecified Tank | 1935 | 41868 |
| BM | 409m SW | Unspecified Tank | 1958 | 42705 |
| BG | 417m S | Unspecified Tank | 1971 | 37767 |
| Y | 427m W | Tanks | 1965 | 39446 |
| AT | 437m SE | Unspecified Tank | 1990 | 42746 |
| AT | 441m SE | Unspecified Tank | 1993 | 42746 |
| Y | 443m W | Tanks | 1879 | 39445 |
| BS | 445m S | Unspecified Tank | 1971 | 37768 |
| AT | 448m SE | Tanks | 1971 | 39424 |
| Y | 449m W | Unspecified Tank | 1958 | 37780 |
| BS | 461m S | Tanks | 1994 | 42857 |
| BS | 462m S | Unspecified Tank | 1982 | 37769 |
| BS | 462m S | Tanks | 1982 | 42857 |
| BS | 462m S | Tanks | 1971 | 42857 |
| BS | 462m S | Tanks | 1986 | 42857 |
| Y | 465m W | Unspecified Tank | 1958 | 37794 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------|------|----------|
| Y | 468m W | Unspecified Tank | 1958 | 37781 |
| Y | 471m W | Unspecified Tank | 1958 | 37795 |
| Y | 472m W | Unspecified Tank | 1935 | 37789 |
| Y | 475m W | Unspecified Tank | 1965 | 37783 |
| BW | 477m S | Unspecified Tank | 1986 | 42443 |
| BW | 477m S | Unspecified Tank | 1990 | 42443 |
| BW | 477m S | Unspecified Tank | 1986 | 42736 |
| BW | 477m S | Unspecified Tank | 1990 | 42736 |
| BW | 479m S | Unspecified Tank | 1993 | 40858 |
| BW | 480m S | Unspecified Tank | 1993 | 41194 |
| BW | 481m S | Unspecified Tank | 1986 | 42826 |
| BW | 481m S | Unspecified Tank | 1990 | 42826 |
| BW | 482m S | Unspecified Tank | 1993 | 42553 |
| BW | 487m S | Unspecified Tank | 1986 | 41624 |
| BW | 487m S | Unspecified Tank | 1990 | 41624 |
| BW | 489m S | Unspecified Tank | 1993 | 41624 |
| BW | 496m S | Unspecified Tank | 1986 | 41573 |
| BW | 496m S | Unspecified Tank | 1990 | 41573 |
| BW | 498m S | Unspecified Tank | 1993 | 41930 |
| Y | 500m W | Unspecified Tank | 1935 | 37788 |

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

| | |
|----------------------------|-----------|
| Records within 500m | 33 |
|----------------------------|-----------|

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 37**



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------------|------|----------|
| AF | 113m S | Electricity Substation | 1986 | 21507 |
| AF | 113m S | Electricity Substation | 1990 | 21507 |
| AF | 114m S | Electricity Substation | 1971 | 21507 |
| AF | 115m S | Electricity Substation | 1993 | 21174 |
| AS | 207m NW | Electricity Substation | 1995 | 23231 |
| AS | 207m NW | Electricity Substation | 1995 | 23231 |
| AS | 212m NW | Electricity Substation | 1991 | 21933 |
| AS | 212m NW | Electricity Substation | 1991 | 21933 |
| AQ | 281m SW | Electricity Substation | 1993 | 20768 |
| AQ | 282m SW | Electricity Substation | 1988 | 22176 |
| AQ | 282m SW | Electricity Substation | 1988 | 22176 |
| Y | 297m W | Electricity Substation | 1988 | 21793 |
| Y | 297m W | Electricity Substation | 1986 | 21793 |
| Y | 297m W | Electricity Substation | 1990 | 21793 |
| Y | 309m W | Electricity Substation | 1998 | 23116 |
| BL | 405m E | Electricity Substation | 1986 | 20380 |
| BL | 405m E | Electricity Substation | 1990 | 20380 |
| BL | 412m E | Electricity Substation | 1993 | 22295 |
| BJ | 436m SW | Electricity Substation | 1998 | 20218 |
| BJ | 438m SW | Electricity Substation | 1988 | 20218 |
| BJ | 438m SW | Electricity Substation | 1986 | 20218 |
| BJ | 438m SW | Electricity Substation | 1990 | 20218 |
| BU | 458m W | Disused Gas Works | 1965 | 19705 |
| BP | 463m SW | Electricity Substation | 1988 | 20752 |
| BP | 463m SW | Electricity Substation | 1988 | 20752 |
| BP | 471m SW | Electricity Substation | 1993 | 19164 |
| BW | 478m S | Electricity Substation | 1986 | 21027 |
| BW | 478m S | Electricity Substation | 1990 | 21027 |



| ID | Location | Land Use | Date | Group ID |
|----|----------|------------------------|------|----------|
| BW | 480m S | Electricity Substation | 1993 | 21828 |
| BU | 491m W | Gas Governor | 1998 | 22153 |
| BU | 493m W | Gas Governor | 1988 | 22153 |
| BU | 493m W | Gas Governor | 1986 | 22153 |
| BU | 493m W | Gas Governor | 1990 | 22153 |

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

6

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

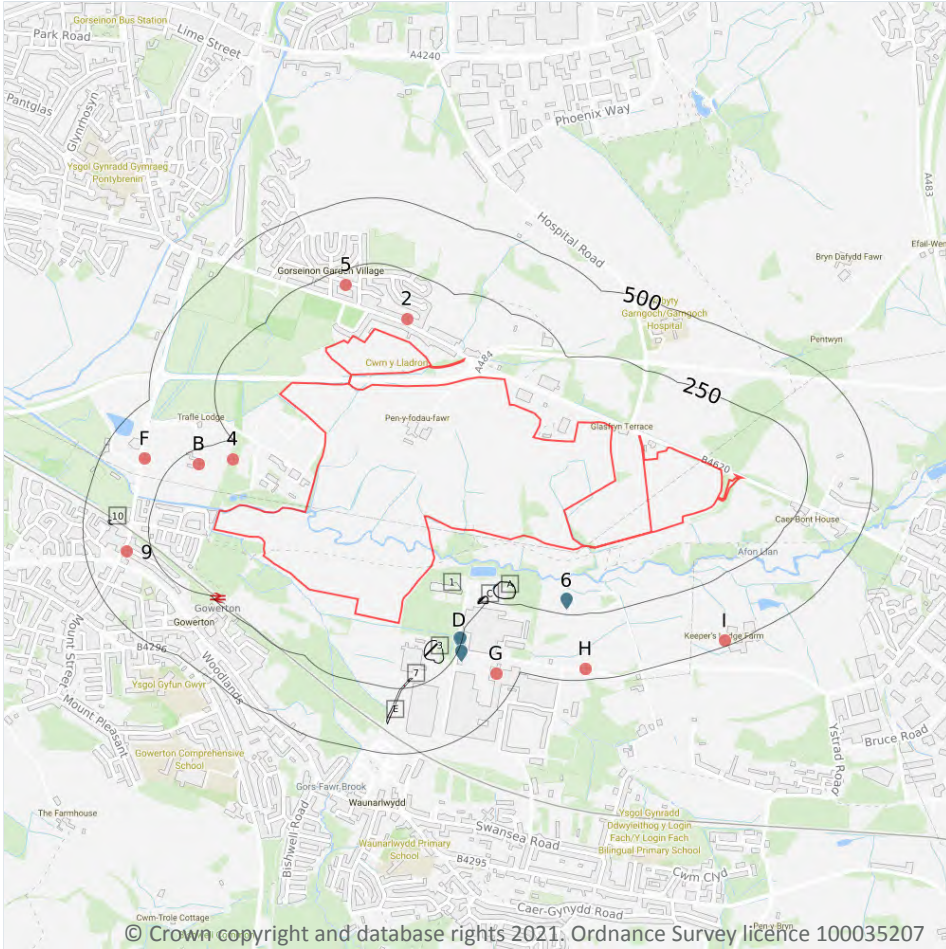
Features are displayed on the Past land use - un-grouped map on **page 37**

| ID | Location | Land Use | Date | Group ID |
|----|----------|----------|------|----------|
| S | 13m E | Garage | 1988 | 7778 |
| S | 13m E | Garage | 1992 | 7778 |
| S | 13m E | Garage | 1946 | 7069 |
| AC | 96m N | Garage | 1988 | 7573 |
| AC | 96m N | Garage | 1992 | 7573 |
| BP | 438m SW | Garage | 1965 | 6627 |

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Active or recent landfill
- Historical landfill (EA/NRW)
- Historical landfill (LA/OS)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m **3**

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation. Features are displayed on the Waste and landfill map on **page 68**

| ID | Location | Details |
|----|----------|--|
| 1 | 41m SE | <p>Operator: Timet U K Ltd Site Address: Titanium Plant, Waunarlwydd, SA1 1XD</p> <p>WML Number: 34005 EPR Reference: IMP003 Landfill type: A7 : Industrial Waste Landfill (Factory curtilage) Status: Closure IPPC Reference: - EPR Number: EAEP\EA\EPR\YP3895FY/A001</p> |



| ID | Location | Details | |
|----|----------|---|---|
| A | 162m S | Operator: Timet U K Ltd Site Address: Titanium Plant, Waunarlwydd, SA1 1XD | WML Number: 34005 EPR Reference: IMP003 Landfill type: A7 : Industrial Waste Landfill (Factory curtilage) Status: Closure IPPC Reference: - EPR Number: EAEPR\EA/EPR/YP3895FY/A001 |
| C | 219m SE | Operator: Timet U K Ltd Site Address: Titanium Plant, Waunarlwydd, SA1 1XD | WML Number: 34005 EPR Reference: IMP003 Landfill type: A7 : Industrial Waste Landfill (Factory curtilage) Status: Closure IPPC Reference: - EPR Number: EAEPR\EA/EPR/YP3895FY/A001 |

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

| | |
|----------------------------|----------|
| Records within 500m | 5 |
|----------------------------|----------|

Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 68**

| ID | Location | Site address | Source | Data type |
|----|----------|--------------|--------------|-----------|
| 7 | 215m S | Refuse Tip | 1971 mapping | Polygon |
| 8 | 219m S | Refuse Tip | 1965 mapping | Polygon |
| E | 316m S | Refuse Tip | 1965 mapping | Polygon |
| E | 316m S | Refuse Tip | 1974 mapping | Polygon |
| 10 | 388m W | Refuse Tip | 1965 mapping | Polygon |

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.



3.4 Historical landfill (EA/NRW records)

Records within 500m

3

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 68**

| ID | Location | Details | | |
|----|----------|---|--|---|
| 3 | 134m SE | Site Address: Alcoa Manufacturing G B Limited Licence Holder Address: Waunarlyydd Works, PO Box 68, Waunarlyydd, Swansea | Waste Licence: Yes Site Reference: EC7/77, L1/7, 6855/0048 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: WV1/L/ALC001 Licence Issue: 07/09/1977 Licence Surrender: 23/11/2001 | Operator: - Licence Holder: Alcoa Manufacturing GB Limited First Recorded - Last Recorded: - |
| A | 163m S | Site Address: IMI Titanium And Alcoa No.1 Licence Holder Address: Titanium Plant, Waunarlyydd, Swansea | Waste Licence: Yes Site Reference: L1/4, SWW 6L SW, W/24/L Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 22/03/1977 Licence Surrender: - | Operator: - Licence Holder: Imperial Metal Industries Limited First Recorded 31/12/1957 Last Recorded: - |
| C | 223m SE | Site Address: IMI Titanium And Alcoa No.1 Licence Holder Address: Titanium Plant, Waunarlyydd, Swansea | Waste Licence: Yes Site Reference: L1/4, SWW 6L SW, W/24/L Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 22/03/1977 Licence Surrender: - | Operator: - Licence Holder: Imperial Metal Industries Limited First Recorded 31/12/1957 Last Recorded: - |

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.



3.6 Licensed waste sites

Records within 500m
16

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 68**

| ID | Location | Details | | |
|----|----------|--|---|---|
| 6 | 198m S | Site Name: Timet Lagoon (formerly I M I Titanium Ltd) Site Address: - Correspondence Address: Po Box 704, Witton, Birmingham, B6 7UR | Type of Site: Lagoon Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP002 EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34004 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure |
| D | 238m E | Site Name: - Site Address: Timet Landfill, Waunarlyydd, Swansea, SA1 1XD Correspondence Address: - | Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3895FY EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 0 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective |
| D | 238m E | Site Name: - Site Address: - Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3895FY EPR reference: - Operator: - Waste Management licence No: 34005 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 238m E | Site Name: - Site Address: Timet Landfill, Waunarlyydd, Swansea, SA1 1XD Correspondence Address: - | Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3895FY EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34005 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |



| ID | Location | Details | | |
|----|----------|---|--|---|
| D | 238m E | Site Name: - Site Address: Timet Landfill, Waunarlyydd, SA1 1XD Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: - Environmental Permitting Regulations (Waste) Licence Number: YP3895FY EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34005 Annual Tonnage: - | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 238m E | Site Name: - Site Address: Timet Landfill, Waunarlyydd, SA1 1XD Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: - Environmental Permitting Regulations (Waste) Licence Number: YP3895FY EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34005 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 239m E | Site Name: Timet Landfill Site Address: - Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP003 EPR reference: YP3895FY/A001 Operator: Timet U K Ltd Waste Management licence No: 34005 Annual Tonnage: 368 | Issue Date: 08/08/1977 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Closure |
| D | 240m E | Site Name: - Site Address: Timet Lagoon, Waunarlyydd, Swansea, SA1 1XD Correspondence Address: - | Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3595FE EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 0 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective |



| ID | Location | Details | | |
|----|----------|--|---|---|
| D | 240m E | Site Name: - Site Address: - Correspondence Address: - | Type of Site: Lagoon Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3595FE EPR reference: - Operator: - Waste Management licence No: 34004 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 240m E | Site Name: - Site Address: Timet Lagoon, Waunarlyydd, Swansea, SA1 1XD Correspondence Address: - | Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: YP3595FE EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34004 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 240m E | Site Name: - Site Address: Timet Lagoon, Waunarlyydd, SA1 1XD Correspondence Address: - | Type of Site: Lagoon Size: - Environmental Permitting Regulations (Waste) Licence Number: YP3595FE EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34004 Annual Tonnage: - | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |
| D | 240m E | Site Name: - Site Address: Timet Lagoon, Waunarlyydd, SA1 1XD Correspondence Address: - | Type of Site: Lagoon Size: - Environmental Permitting Regulations (Waste) Licence Number: YP3595FE EPR reference: - Operator: Timet U K Ltd Waste Management licence No: 34004 Annual Tonnage: 0 | Issue Date: 08/08/1977 Effective Date: 08/08/1977 Modified: - Surrendered Date: - Expiry Date: 21/05/2002 Cancelled Date: - Status: Effective |



| ID | Location | Details | | |
|----|----------|--|---|--|
| D | 241m E | Site Name: Timet Lagoon Site Address: - Correspondence Address: - | Type of Site: Lagoon Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP002 EPR reference: YP3595FE/A001 Operator: Timet U K Ltd Waste Management licence No: 34004 Annual Tonnage: 800 | Issue Date: 08/08/1977 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Closure |
| D | 265m SE | Site Name: Alcoa Manufacturing G B Ltd Site Address: P O Box 68, Waunarlwydd, Swansea, SA1 1XH Correspondence Address: P O Box 68, Waunarlwydd, Swansea, SA1 1XH | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALC001 EPR reference: - Operator: Alcoa Manufacturing G B Ltd Waste Management licence No: 34021 Annual Tonnage: 0 | Issue Date: 30/11/1988 Effective Date: - Modified: - Surrendered Date: 23/11/2001 Expiry Date: - Cancelled Date: - Status: Surrendered |
| D | 265m SE | Site Name: Alcoa Manufacturing G B Ltd Site Address: P O Box 68, Waunarlwydd, Swansea, SA1 1XH Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALC001 EPR reference: JP3795FM/S002 Operator: Alcoa Manufacturing G B Ltd Waste Management licence No: 34021 Annual Tonnage: 75000 | Issue Date: 30/11/1988 Effective Date: - Modified: - Surrendered Date: 2.00111e+016 Expiry Date: 0 Cancelled Date: 0 Status: Surrendered |
| D | 265m SE | Site Name: Alcoa Manufacturing G B Ltd Site Address: P O Box 68, Waunarlwydd, Swansea, SA1 1XH Correspondence Address: - | Type of Site: Industrial Waste Landfill (Factory curtilage) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALC001 EPR reference: EA/EPR/JP3795FM/S002 Operator: Alcoa Manufacturing G B Ltd Waste Management licence No: 34021 Annual Tonnage: 75000 | Issue Date: 30/11/1988 Effective Date: - Modified: - Surrendered Date: 23/11/2001 Expiry Date: - Cancelled Date: - Status: Surrendered |



This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m

21

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 68**

| ID | Location | Site | Reference | Category | Sub-Category | Description |
|----|----------|---|---------------|--------------------------|------------------------------------|--|
| 2 | 78m N | 48 Swansea Road, Gorseinon, Swansea, Abertawe, sa4 4he | NRW-WME001804 | Using waste exemption | Waste Exemption - Non-Agricultural | Use of waste in construction |
| 4 | 176m N | City & County of Swansea Council, Kingsbridge to Gowerton Cycle Link, Trafle Farm, Gowerton, Swansea, Abertawe, SA4 3AA | NRW-WME050759 | Using waste exemption | Not on a farm | Use of waste in construction |
| B | 194m NW | Morgan Sindall Construction & Infrastructure Ltd, Gowerton, Swansea, SA4, SA43AA | NRW-WME033676 | Storing waste exemption | Not on a farm | Storage of waste in a secure place |
| B | 194m NW | Morgan Sindall Construction & Infrastructure Ltd, Gowerton, Swansea, SA4, SA43AA | NRW-WME033677 | Using waste exemption | Not on a farm | Use of waste in construction |
| 5 | 195m N | 52 St Pauls terrace Garden Village swansea swansea sa44ez | NRW-WME031644 | Using waste exemption | Not on a farm | Use of waste for a specified purpose |
| 9 | 345m W | ALJ Pharma Ltd, ALJ Pharma Ltd T/A Gowerton Pharmacy, 22 Mill Street, Gowerton, Swansea, West Glamorgan, SA4 3ED | NRW-WME063458 | Treating waste exemption | Not on a farm | Sorting and de-naturing of controlled drugs for disposal |
| F | 348m NW | Morgan Sindall Construction & Infrastructure Ltd, Gowerton Waste Water Treatment Works, Victoria Road, Gowerton, Swansea, SA4 3AB | NRW-WME050394 | Storing waste exemption | Not on a farm | Storage of waste in a secure place |



| ID | Location | Site | Reference | Category | Sub-Category | Description |
|----|----------|--|---------------|--------------------------|---|---|
| F | 348m NW | DCWW, Trafle Farm, Victoria Road, Gowerton, Abertawe, SA43AB | NRW-WME022689 | Storing waste exemption | Not on a farm | Storage of sludge |
| F | 348m NW | Dwr Cymru Welsh Water, Victoria Road, Swansea, Abertawe, SA4 3AB | NRW-WME001076 | Storing waste exemption | Waste Exemption - Agricultural | Storage of sludge |
| G | 418m SE | Fiberight Limited, Unit 1, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME063605 | Using waste exemption | Not on a farm | Use of waste to manufacture finished goods |
| G | 418m SE | Fiberight Limited, Unit 1, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME063605 | Storing waste exemption | Not on a farm | Storage of waste in a secure place |
| G | 418m SE | Fiberight Limited, Unit 1, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME063605 | Treating waste exemption | Not on a farm | Preparatory treatments (baling, sorting, shredding etc) |
| G | 418m SE | Fiberight Limited, Unit 1, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME063605 | Treating waste exemption | Not on a farm | Cleaning, washing, spraying or coating relevant waste |
| H | 459m S | Eg power ltd, eg power, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME051087 | Treating waste exemption | Waste Exemption - Agricultural and Non-Agricultural | Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising |
| H | 459m S | Eg power ltd, eg power, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA5 4SF | NRW-WME051088 | Using waste exemption | Waste Exemption - Agricultural and Non-Agricultural | Burning of waste as a fuel in a small appliance |
| H | 459m S | THE TREATMENT HUB LTD, BUILDING 2, WESTFIELD IND PARK, SWANSEA, SWANSEA, SA5 4SF | NRW-WME043843 | Storing waste exemption | Not on a farm | Storage of waste in a secure place |
| H | 459m S | THE TREATMENT HUB LTD, BUILDING 2, WESTFIELD IND PARK, SWANSEA, SWANSEA, SA5 4SF | NRW-WME043843 | Storing waste exemption | Not on a farm | Storage of waste in secure containers |

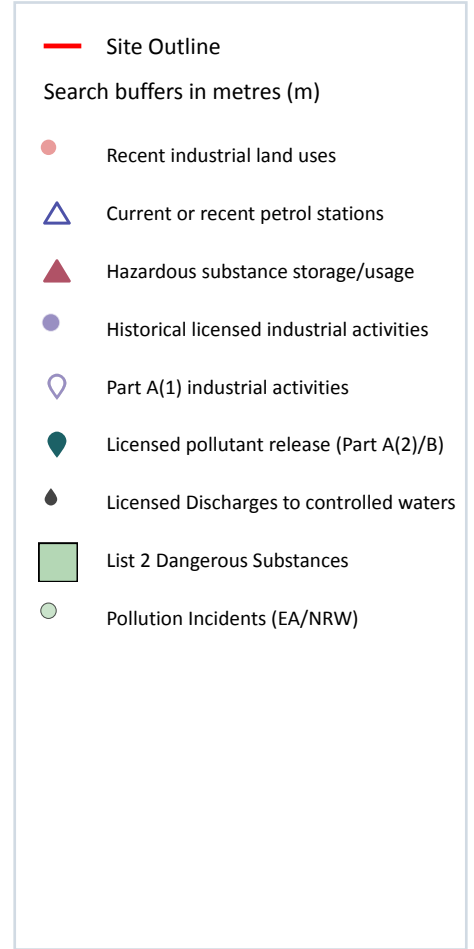
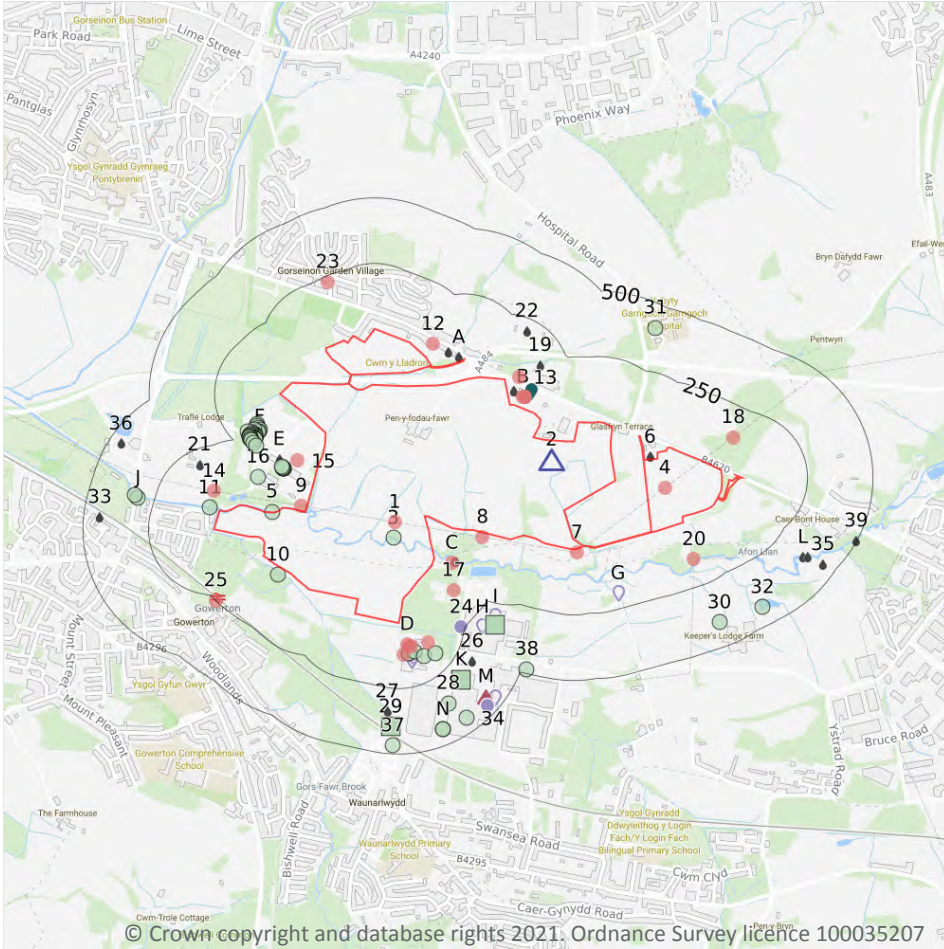


| ID | Location | Site | Reference | Category | Sub-Category | Description |
|----|----------|---|-------------------|----------------------------|---------------|--|
| H | 459m S | THE TREATMENT HUB LTD, BUILDING 2, WESTFIELD IND PARK, SWANSEA, SWANSEA, SWANSEA, SA5 4SF | NRW- WME043843 | Using waste exemption | Not on a farm | Use of waste in construction |
| H | 459m S | Hill Group, Hill Insulation Ltd, Unit 7, Westfield Industrial Park, Waunarwydd, Swansea, Abertawe, SA54SF | NRW- WME035392 | Using waste exemption | Not on a farm | Burning of waste as a fuel in a small appliance |
| I | 480m S | DCWW, Keepers Lodge Farm Field 16, Waunarwydd, Swansea, Abertawe, SA54NQ | NRW- WME030026 | Storing waste exemption | Not on a farm | Storage of sludge |
| I | 480m S | DCWW, Keepers Lodge Farm Field 10, Waunarwydd, Swansea, Abertawe, SA54NQ | NRW- WME030028 | Storing waste exemption | Not on a farm | Storage of sludge |

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m

24

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Company | Address | Activity | Category |
|----|----------|---------|---------------------|---------------------|-------------------------------|
| 1 | On site | Pylon | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| 4 | On site | Pylon | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| 7 | 14m S | Pylon | West Glamorgan, SA5 | Electrical Features | Infrastructure and Facilities |

| ID | Location | Company | Address | Activity | Category |
|----|----------|----------------------|--|--|-------------------------------|
| 8 | 17m S | Pylon | West Glamorgan, SA5 | Electrical Features | Infrastructure and Facilities |
| 9 | 19m N | Pylon | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| B | 41m N | Days Fleet | Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4LL | Vehicle Hire and Rental | Hire Services |
| B | 44m N | Days Rental | Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4LL | Vehicle Hire and Rental | Hire Services |
| B | 45m N | C E M Day's Ltd | Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4LL | New Vehicles | Motoring |
| B | 45m N | HiQ Centre | Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4LL | Vehicle Repair, Testing and Servicing | Repair and Servicing |
| 12 | 56m NE | Raw2k - Scrap My Car | 7, Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4HF | Scrap Metal Merchants | Recycling Services |
| 13 | 56m E | Gower Mini Travel | White Lodge, Swansea Road, Gorseinon, Swansea, West Glamorgan, SA4 4LQ | Vehicle Hire and Rental | Hire Services |
| C | 69m E | Outfall | West Glamorgan, SA5 | Waste Storage, Processing and Disposal | Infrastructure and Facilities |
| 14 | 77m N | Pylon | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| 15 | 82m W | Sewage Works | West Glamorgan, SA4 | Waste Storage, Processing and Disposal | Infrastructure and Facilities |
| D | 86m S | Silo | West Glamorgan, SA5 | Hoppers and Silos | Farming |
| D | 95m SE | Silo | West Glamorgan, SA5 | Hoppers and Silos | Farming |
| D | 98m SE | Silo | West Glamorgan, SA5 | Hoppers and Silos | Farming |
| D | 124m S | Tip | West Glamorgan, SA5 | Refuse Disposal Facilities | Infrastructure and Facilities |
| 17 | 124m SE | Sludge | West Glamorgan, SA5 | Waste Storage, Processing and Disposal | Infrastructure and Facilities |
| 18 | 133m NE | Pylon | West Glamorgan, SA5 | Electrical Features | Infrastructure and Facilities |
| D | 133m SE | Chimney | West Glamorgan, SA5 | Chimneys | Industrial Features |



| ID | Location | Company | Address | Activity | Category |
|----|----------|-------------------------|---------------------|---------------------------------------|---|
| 20 | 146m S | Pylon | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| 23 | 227m NW | Electricity Sub Station | West Glamorgan, SA4 | Electrical Features | Infrastructure and Facilities |
| 25 | 249m SW | Gowerton Rail Station | West Glamorgan, SA4 | Railway Stations, Junctions and Halts | Public Transport, Stations and Infrastructure |

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m **1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Company | Address | LPG | Status |
|----|----------|----------|---|----------------|----------|
| 2 | On site | OBSOLETE | Swansea Road, Garden Village, Swansea, Swansea, SA4 4LL | Not Applicable | Obsolete |

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m **0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m **0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m **0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m **0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m **0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m **1**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Details | |
|----|----------|---|---|
| M | 435m SE | Application reference number: No Details Application status: Historical Consent Application date: No Details Address: Timet UK Ltd, PO Box 57, Waunarlwydd, Swansea, SA1 1XD | Details: No Details Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified |

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

8

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Details | |
|----|----------|--|---|
| 24 | 237m E | Operator: Timet UK (export) Ltd Address: PO Box 57, Waunarlyydd, Swansea, West Glamorgan, SA1 1XD Process: Acid Processes Permit Number: AL8355 | Original Permit Number: IPCAPP Date Approved: 18-5-1994 Effective Date: 31-5-1994 Status: Referred To La |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: AX6168 | Original Permit Number: IPCAPP Date Approved: 11-6-1997 Effective Date: 17-6-1997 Status: Superseded By Variation |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: AZ6037 | Original Permit Number: IPCMAJVAR Date Approved: 4-12-1997 Effective Date: 7-12-1997 Status: Superseded By Variation |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: BE1011 | Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: BH8888 | Original Permit Number: IPCMINVAR Date Approved: 18-4-2000 Effective Date: 12-5-2000 Status: Superseded By Variation |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: BK9601 | Original Permit Number: IPCMINVAR Date Approved: 25-6-2001 Effective Date: 28-6-2001 Status: Superseded By Variation |
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlyydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: BQ4467 | Original Permit Number: IPCMINVAR Date Approved: 21-5-2002 Effective Date: 28-5-2002 Status: Superseded By Variation |



| ID | Location | Details | |
|----|----------|--|--|
| M | 462m SE | Operator: Aleris Recycling (swansea) Ltd Address: Waunarwydd Works, Waunarlwydd, Swansea, SA5 4SF Process: Non-ferrous Metals Permit Number: BU6077 | Original Permit Number: IPCMINVAR Date Approved: 7-5-2003 Effective Date: 9-5-2003 Status: Revoked - Now Ippc |

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

| | |
|----------------------------|-----------|
| Records within 500m | 26 |
|----------------------------|-----------|

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Details | |
|----|----------|---|--|
| D | 140m S | Operator: REAL ALLOY UK LIMITED Installation Name: REAL ALLOY UK LTD Process: - Permit Number: EP3935UC Original Permit Number: - | EPR Reference: - Issue Date: 31/01/2018 Effective Date: 31/01/2018 Last date noted as effective: 01/04/2018 Status: EFFECTIVE |
| D | 140m S | Operator: REAL ALLOY UK LIMITED Installation Name: REAL ALLOY UK LTD Process: MELTING, INCLUDING MAKING ALLOYS OF, NON-FERROUS METALS, INCLUDING RECOVERED PRODUCTS AND THE OPERATION OF NON-FERROUS METAL FOUNDRIES WHERE THE PLANT HAS A MELTING CAPACITY OF MORE THAN 4 TONNES PER DAY FOR LEAD OR CADMIUM OR 20 TONNES PER DAY FOR ALL OTHER METALS Permit Number: EP3935UC Original Permit Number: - | EPR Reference: - Issue Date: 27/01/2020 Effective Date: 27/01/2020 Last date noted as effective: 01/07/2021 Status: EFFECTIVE |
| D | 153m S | Operator: TIMET UK LTD Installation Name: TIMET WAUNARLWYDD Process: ASSOCIATED PROCESS Permit Number: TP3637MW Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 27/07/2007 Effective Date: 27/07/2007 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| D | 153m S | Operator: TIMET UK LTD Installation Name: TIMET WAUNARLWYDD Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: TP3637MW Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 27/07/2007 Effective Date: 27/07/2007 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |



| ID | Location | Details | |
|----|----------|--|--|
| G | 191m S | Operator: VIRIDIS 178 LTD Installation Name: VIRIDIS 178 SWANSEA POWER PLANT Process: BURNING ANY FUEL IN AN APPLIANCE Permit Number: AB3393CP Original Permit Number: CP3630AJ | EPR Reference: - Issue Date: 10/01/2017 Effective Date: 10/01/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE |
| G | 191m S | Operator: VIRIDIS 178 LTD Installation Name: VIRIDIS 178 SWANSEA POWER PLANT Process: - Permit Number: AB3393CP Original Permit Number: - | EPR Reference: - Issue Date: 10/01/2017 Effective Date: 10/01/2017 Last date noted as effective: 01/04/2017 Status: ISSUED |
| G | 191m S | Operator: VIRIDIS 178 LTD Installation Name: VIRIDIS 178 SWANSEA POWER PLANT Process: BURNING ANY FUEL IN AN APPLIANCE WITH A RATED THERMAL INPUT OF 50 OR MORE MEGAWATTS Permit Number: AB3393CP Original Permit Number: CP3630AJ | EPR Reference: - Issue Date: 26/02/2021 Effective Date: 26/02/2021 Last date noted as effective: 01/07/2021 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: TIMET WAUNARLWYDD Process: ASSOCIATED PROCESS Permit Number: GP3836FQ Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 16/07/2012 Effective Date: 16/07/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: TIMET WAUNARLWYDD Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: GP3836FQ Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 16/07/2012 Effective Date: 16/07/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: ASSOCIATED PROCESS Permit Number: XP3730WR Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 17/11/2015 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: XP3730WR Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 17/11/2015 Status: EFFECTIVE |



| ID | Location | Details | |
|----|----------|---|--|
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: - Permit Number: BX9846ID Original Permit Number: XP3730WR | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 01/12/2016 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: UNLESS FALLING WITHIN PART A2 OF THIS SECTION, SURFACE TREATING METALS AND PLAST... Permit Number: BX9846ID Original Permit Number: XP3730WR | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 01/04/2018 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: UNLESS FALLING WITHIN PART A2 OF THIS SECTION, SURFACE TREATING METALS AND PLAST... Permit Number: BX9846ID Original Permit Number: XP3730WR | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 01/04/2018 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: - Permit Number: BX9846ID Original Permit Number: XP3730WR | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 01/07/2021 Status: EFFECTIVE |
| H | 299m SE | Operator: TIMET UK LTD Installation Name: WAUNARLWYDD EPR/BX9846ID Process: UNLESS FALLING WITHIN PART A(2) OF THIS SECTION, SURFACE TREATING METALS AND PLASTIC MATERIALS USING AN ELECTROLYTIC OR CHEMICAL PROCESS WHERE THE AGGREGATED VOLUME OF THE TREATMENT VATS IS MORE THAN 30M3 Permit Number: BX9846ID Original Permit Number: XP3730WR | EPR Reference: - Issue Date: 20/01/2015 Effective Date: 20/01/2015 Last date noted as effective: 01/07/2021 Status: EFFECTIVE |
| I | 300m S | Operator: TIMET UK LTD Installation Name: TIMET WAUNARLWYDD Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: BX9846ID Original Permit Number: BX9846ID | EPR Reference: - Issue Date: 10/01/2005 Effective Date: 10/01/2005 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| M | 462m SE | Operator: ALCOA MANUFACTURING (G.B.) LIMITED Installation Name: WAUNARLWYDD NON FERROUS METALS EA/EPR/BM1377IT/S009 Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BM1377IT Original Permit Number: BM1377IT | EPR Reference: - Issue Date: 12/08/2003 Effective Date: 12/08/2003 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |



| ID | Location | Details | |
|----|----------|---|--|
| M | 462m SE | Operator: ALCOA MANUFACTURING (G.B.) LIMITED Installation Name: WAUNARLWYDD NON FERROUS METALS Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BP3739LM Original Permit Number: BM1377IT | EPR Reference: - Issue Date: 09/01/2006 Effective Date: 10/01/2006 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| M | 462m SE | Operator: ALCOA MANUFACTURING (G.B.) LIMITED Installation Name: WAUNARLWYDD NON FERROUS METALS Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BX1713B Original Permit Number: BM1377IT | EPR Reference: - Issue Date: 24/12/2003 Effective Date: 29/12/2003 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| M | 462m SE | Operator: ALCOA MANUFACTURING (G.B.) LIMITED Installation Name: WAUNARLWYDD NON FERROUS METALS Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BX6928IY Original Permit Number: BM1377IT | EPR Reference: - Issue Date: 07/04/2004 Effective Date: 09/04/2004 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| M | 462m SE | Operator: ALCOA MANUFACTURING (G.B.) LIMITED Installation Name: WAUNARLWYDD NON FERROUS METALS Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: EP3337PQ Original Permit Number: BM1377IT | EPR Reference: - Issue Date: 11/08/2004 Effective Date: 13/08/2004 Last date noted as effective: 17/11/2015 Status: SUPERCEDED |
| M | 466m SE | Operator: THE TREATMENT HUB LIMITED Installation Name: THE TRAETMENT HUB SWANSEA EPR/ZP3933NJ Process: RECOVERY OF WASTE; HAZARDOUS WASTE >10T/D BY RECYCLING INORGANICS (NOT METALS) Permit Number: ZP3933NJ Original Permit Number: ZP3933NJ | EPR Reference: - Issue Date: 30/09/2013 Effective Date: 30/09/2013 Last date noted as effective: 17/11/2015 Status: EFFECTIVE |
| M | 466m SE | Operator: THE TREATMENT HUB LIMITED Installation Name: BUILDING 2 Process: - Permit Number: ZP3933NJ Original Permit Number: ZP3933NJ | EPR Reference: - Issue Date: 30/09/2013 Effective Date: 30/09/2013 Last date noted as effective: 01/12/2016 Status: EFFECTIVE |
| M | 466m SE | Operator: THE TREATMENT HUB LIMITED Installation Name: BUILDING 2 Process: - Permit Number: ZP3933NJ Original Permit Number: ZP3933NJ | EPR Reference: - Issue Date: 30/09/2013 Effective Date: 30/09/2013 Last date noted as effective: 01/07/2021 Status: EFFECTIVE |



| ID | Location | Details | |
|----|----------|---|---|
| M | 466m SE | Operator: THE TREATMENT HUB LIMITED Installation Name: BUILDING 2 Process: - Permit Number: ZP3933NJ Original Permit Number: ZP3933NJ | EPR Reference: - Issue Date: 30/09/2013 Effective Date: 30/09/2013 Last date noted as effective: 01/04/2018 Status: EFFECTIVE |

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

| | |
|----------------------------|----------|
| Records within 500m | 1 |
|----------------------------|----------|

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Address | Details | |
|----|----------|---|---|--|
| B | 71m N | CEM Days Ltd, Llanelli Road, Garngoch, Swansea, SA4 2LL | Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B | Enforcement: No Enforcemets Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified |

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

| | |
|----------------------------|-----------|
| Records within 500m | 21 |
|----------------------------|-----------|

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Address | Details | |
|----|----------|---|--|---|
| 6 | 10m N | CAE-NEWYDD FARM SWANSEA RD. GORSEIN, CAE-NEWYDD FARM SWANSEA RD. GORS, SWANSEA RD. GORSEINON., GORSEINON., UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BP0108001 Permit Version: 1 Receiving Water: TO LAND | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 14/11/1988 Effective Date: 14/11/1988 Revocation Date: 29/07/1994 |
| A | 16m N | SSO. CWM LLADRON P.S. GORSEINON, SSO. CWM LLADRON P.S. GORSEINON, GORSEINON, UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BW2302301 Permit Version: 1 Receiving Water: UNNAMED STREAM | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 19/10/1989 Effective Date: 19/10/1989 Revocation Date: 14/03/1994 |
| B | 24m E | CAR WASH WATER DIS. FROM C.E.M, CAR WASH WATER DIS. FROM C.E.M, UNKNOWN, UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BC0007201 Permit Version: 1 Receiving Water: TRIBUTARY OF THE RIVER LLAN | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 27/06/1968 Effective Date: 27/06/1968 Revocation Date: 23/10/1992 |
| B | 24m E | CAR WASH WATER DIS. FROM C.E.M, CAR WASH WATER DIS. FROM C.E.M, UNKNOWN, UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BC0007202 Permit Version: 1 Receiving Water: TRIBUTARY OF THE RIVER LLAN | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 27/06/1968 Effective Date: 27/06/1968 Revocation Date: 19/10/1992 |
| A | 48m N | HOUSE ADJ NO. 1 SWANSEA ROAD UPLAND, HOUSE ADJ NO. 1 SWANSEA ROAD UPL, UPLANDS GORSEINON SWANSEA, GORSEINON SWANSEA, SWANSEA, SWANSEA | Effluent Type: UNSPECIFIED Permit Number: BE0001201 Permit Version: 1 Receiving Water: TO LAND NEAR RIVER LLAN | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 17/02/1967 Effective Date: 17/02/1967 Revocation Date: 31/01/1994 |
| C | 74m E | WAUNARLWYDD WORKS SWANSEA, WAUNARLWYDD WORKS SWANSEA, SWANSEA, SWANSEA, SWANSEA | Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BP0227801 Permit Version: 1 Receiving Water: AFON LLAN | Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV) Issue date: 21/04/1993 Effective Date: 21/04/1993 Revocation Date: 06/02/2007 |
| C | 83m E | WAUNARLWYDD WORKS SWANSEA, WAUNARLWYDD WORKS SWANSEA, SWANSEA, SWANSEA, SWANSEA, SWANSEA | Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BC0012101 Permit Version: 1 Receiving Water: UNNAMED TRIBUTARY OF THE GORS | Status: REVOKED - UNSPECIFIED Issue date: 28/07/1970 Effective Date: 28/07/1970 Revocation Date: 24/04/1997 |
| 19 | 145m E | SEPTIC TANK AT GARAGE CEM DAY, SEPTIC TANK AT GARAGE CEM DAY, UNKNOWN, UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BC0002301 Permit Version: 1 Receiving Water: SMALL POOL GARNGOCH COMMON | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 11/05/1966 Effective Date: 11/05/1966 Revocation Date: 22/05/1996 |



| ID | Location | Address | Details | |
|----|----------|---|---|--|
| E | 150m W | GOWERTON WwTW, GOWERTON WwTW, Victoria Road, GOWERTON, Swansea, SA4 3AB | Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: BC0003001 Permit Version: 10 Receiving Water: LOUGHOR ESTUARY | Status: Effective Issue date: 31/07/2018 Effective Date: 31/12/2020 Revocation Date: - |
| F | 176m SW | GOWERTON WwTW, GOWERTON WwTW, Victoria Road, GOWERTON, Swansea, SA4 3AB | Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: BC0003001 Permit Version: 10 Receiving Water: LOUGHOR ESTUARY | Status: Effective Issue date: 31/07/2018 Effective Date: 31/12/2020 Revocation Date: - |
| F | 176m SW | GOWERTON WwTW, GOWERTON WwTW, VICTORIA ROAD, GOWERTON, Swansea, SA4 3AB | Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: BC0003001 Permit Version: 9 Receiving Water: LOUGHOR ESTUARY | Status: Effective Issue date: 08/12/2017 Effective Date: 08/12/2017 Revocation Date: - |
| 21 | 191m NW | TRAFLE FM VICTORIS RD GOWERTON., TRAFLE FM VICTORIS RD GOWERTON., VICTORIS RD GOWERTON., GOWERTON., UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BM0019301 Permit Version: 1 Receiving Water: UNDERGROUND STRATA | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 29/10/1981 Effective Date: 29/10/1981 Revocation Date: 10/10/1994 |
| 22 | 202m NE | PEN Y WAUN FARM GARNGOCH GORSEINON, PEN Y WAUN FARM GARNGOCH GORSEIN, GARNGOCH GORSEINON SWANSEA, GORSEINON SWANSEA, SWANSEA, SWANSEA | Effluent Type: UNSPECIFIED Permit Number: BM0028001 Permit Version: 1 Receiving Water: UNDERGROUND STRATA | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 08/02/1983 Effective Date: 08/02/1983 Revocation Date: 02/07/1994 |
| 26 | 314m SE | WAUNARLWYDD WORKS SWANSEA, WAUNARLWYDD WORKS SWANSEA, SWANSEA, SWANSEA, SWANSEA, SWANSEA | Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BC0012101 Permit Version: 2 Receiving Water: UNNAMED TRIBUTARY OF THE GORS | Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 24/04/1997 Effective Date: 25/04/1997 Revocation Date: 02/04/2009 |
| 27 | 340m S | FORMER WASTE TIPPING, ALCOA EXTRUSIONS UK LIMITED, WAUNARLWYDD WORKS, PO BOX 42, SWANSEA, SA1 1YD | Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: BP0294301 Permit Version: 1 Receiving Water: TRIB OF GORS FAWR BROOK | Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 28/03/2002 Effective Date: 28/03/2002 Revocation Date: 06/02/2007 |



| ID | Location | Address | Details | |
|----|----------|--|--|--|
| L | 370m SE | DENVER ROAD CSO FFORESTFACH SWANSEA, COMBINED SEWER OVERFLOW, DENVER ROAD, FFORESTFACH, SWANSEA | Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BP0305401 Permit Version: 1 Receiving Water: THE AFON LLAN | Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 21/03/2003 Effective Date: 31/03/2003 Revocation Date: 31/03/2010 |
| L | 382m SE | DENVER R'D INTO CULVERT SWANSEA, DENVER ROAD INTO CULVERT, SWANSEA ROAD, SWANSEA, Swansea | Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BP0320801 Permit Version: 2 Receiving Water: RIVER LLAN | Status: Effective Issue date: 11/02/2010 Effective Date: 31/03/2010 Revocation Date: - |
| 33 | 438m W | COOL'G WATER/BOILER BLOW DOWN ELBA, COOL'G WATER/BOILER BLOW DOWN EL, ELBA WKS (ABANDONED), UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BE0020601 Permit Version: 1 Receiving Water: UNNAMED TRIB RIVER LLAN | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 24/07/1969 Effective Date: 24/07/1969 Revocation Date: 09/03/1992 |
| 35 | 447m SE | SWO.NEAR LLEWITHA BRIDGE (POIN, SWO.NEAR LLEWITHA BRIDGE (POIN, UNKNOWN, UNKNOWN, UNKNOWN, UNKNOWN | Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BW4106301 Permit Version: 2 Receiving Water: River Llan | Status: Effective Issue date: 08/09/2010 Effective Date: 08/09/2010 Revocation Date: - |
| 36 | 455m NW | SITE OFF. OPP.NO.13 VICTORIA RD. GO, SITE OFF. OPP.NO.13 VICTORIA RD., OPP.NO.13 VICTORIA RD. GOWERTON., GOWERTON., UNKNOWN, UNKNOWN | Effluent Type: UNSPECIFIED Permit Number: BP0121401 Permit Version: 1 Receiving Water: TO LAND | Status: CONSENT EXPIRED - TIME LIMIT Issue date: 20/04/1989 Effective Date: 20/04/1989 Revocation Date: 07/07/1997 |
| 39 | 497m SE | LLIWITHA ROAD CSO, LLIWITHA ROAD CSO, LLIWITHA ROAD, OFF CARMARTHEN ROAD, Swansea | Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: BP0296601 Permit Version: 1 Receiving Water: AFON LLAN | Status: Effective Issue date: 25/03/2002 Effective Date: 25/03/2002 Revocation Date: - |

This data is sourced from the Environment Agency and Natural Resources Wales.



4.14 Pollutant release to surface waters (Red List)

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

| | |
|----------------------------|----------|
| Records within 500m | 5 |
|----------------------------|----------|

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Name | Status | Receiving Water | Authorised Substances |
|----|----------|--|------------|-----------------|--------------------------------------|
| K | 322m SE | Alcoa Gb Ltd, Cooling Tower 810c, Waunarwydd Wrks, Swansea | Not Active | Loughor Estuary | Chromium, Copper, Lead, Nickel, Zinc |
| K | 322m SE | Alcoa Gb Ltd, Cooling Tower 814g, Waunarwydd Wrks, Swansea | Not Active | Loughor Estuary | Chromium, Copper, Lead, Nickel, Zinc |
| K | 322m SE | Alcoa Gb Ltd, Cooling Tower 818b, Waunarwydd Wrks, Swansea | Not Active | Loughor Estuary | Chromium, Copper, Lead, Nickel, Zinc |
| I | 330m S | Timet Waunarlydd, Swansea | Not Active | Loughor Estuary | Chromium, Copper, Nickel, Zinc |
| 29 | 397m S | Alcoa Extruded Products Waunarlydd Swansea | Not Active | Loughor Estuary | Chromium, Copper, Lead, Nickel, Zinc |



This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

54

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 78**

| ID | Location | Details | |
|----|----------|---|---|
| 3 | On site | Incident Date: 10/08/2015 Incident Identification: 1363114 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified | Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact) |
| 5 | 3m N | Incident Date: 21/08/2014 Incident Identification: 1270283 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| 10 | 28m SW | Incident Date: 16/10/2014 Incident Identification: 1287241 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| 11 | 38m W | Incident Date: 08/11/2013 Incident Identification: 1174751 Pollutant: - Pollutant Description: - | Water Impact: - Land Impact: - Air Impact: - |
| 16 | 118m N | Incident Date: 11/12/2013 Incident Identification: 1183007 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| D | 121m S | Incident Date: 20/07/2001 Incident Identification: 23032 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |
| D | 121m S | Incident Date: 20/07/2001 Incident Identification: 23026 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |
| D | 124m SE | Incident Date: 22/11/2013 Incident Identification: 1177998 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Chemical Odour | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |



| ID | Location | Details | |
|----|----------|---|--|
| E | 125m W | Incident Date: 13/02/2015 Incident Identification: 1313488 Pollutant: Sewage Materials Pollutant Description: Crude Sewage | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| E | 125m W | Incident Date: 24/07/2014 Incident Identification: 1260310 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| E | 125m W | Incident Date: 15/02/2015 Incident Identification: 1313901 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| E | 127m W | Incident Date: 23/11/2015 Incident Identification: 1389597 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| E | 128m W | Incident Date: 15/04/2014 Incident Identification: 1227334 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| E | 134m W | Incident Date: 14/04/2015 Incident Identification: 1328566 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 143m SW | Incident Date: 17/12/2013 Incident Identification: 1184255 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 150m SW | Incident Date: 09/11/2014 Incident Identification: 1293186 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 153m SW | Incident Date: 01/04/2014 Incident Identification: 1223238 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 154m SW | Incident Date: 09/11/2014 Incident Identification: 1293037 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |



| ID | Location | Details | |
|----|----------|---|---|
| D | 158m SE | Incident Date: 28/07/2014 Incident Identification: 1261680 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 161m SW | Incident Date: 18/03/2015 Incident Identification: 1321333 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 165m SW | Incident Date: 30/04/2015 Incident Identification: 1333420 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 167m SW | Incident Date: 10/07/2013 Incident Identification: 1131134 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 178m SW | Incident Date: 25/11/2014 Incident Identification: 1297295 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| D | 180m SE | Incident Date: 14/06/2001 Incident Identification: 9260 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |
| F | 182m SW | Incident Date: 29/07/2013 Incident Identification: 1140726 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 182m SW | Incident Date: 14/02/2014 Incident Identification: 1208102 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 185m SW | Incident Date: 30/09/2014 Incident Identification: 1282545 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 185m SW | Incident Date: 12/06/2014 Incident Identification: 1244607 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |



| ID | Location | Details | |
|----|----------|---|--|
| F | 186m SW | Incident Date: 23/06/2014 Incident Identification: 1248196 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 189m SW | Incident Date: 26/11/2013 Incident Identification: 1178934 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 190m SW | Incident Date: 13/01/2016 Incident Identification: 1402878 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 190m SW | Incident Date: 05/12/2014 Incident Identification: 1299493 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 192m SW | Incident Date: 15/12/2014 Incident Identification: 1301249 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 194m SW | Incident Date: 23/10/2014 Incident Identification: 1288957 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 195m SW | Incident Date: 11/12/2014 Incident Identification: 1300416 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 200m SW | Incident Date: 13/08/2014 Incident Identification: 1268006 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 200m SW | Incident Date: 26/06/2014 Incident Identification: 1249868 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 201m SW | Incident Date: 02/12/2014 Incident Identification: 1298862 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |



| ID | Location | Details | |
|----|----------|--|---|
| F | 202m SW | Incident Date: 20/01/2015 Incident Identification: 1307868 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 202m SW | Incident Date: 20/01/2015 Incident Identification: 1307869 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 204m SW | Incident Date: 25/11/2013 Incident Identification: 1178591 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 207m SW | Incident Date: 23/01/2014 Incident Identification: 1197491 Pollutant: Sewage Materials Pollutant Description: Final Effluent | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| F | 210m SW | Incident Date: 12/06/2014 Incident Identification: 1244707 Pollutant: Sewage Materials Pollutant Description: Crude Sewage | Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact) |
| J | 312m W | Incident Date: 27/03/2015 Incident Identification: 1324137 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified | Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact) |
| J | 326m W | Incident Date: 29/04/2015 Incident Identification: 1333256 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified | Water Impact: - Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact) |
| 28 | 359m SE | Incident Date: 15/10/2002 Incident Identification: 123733 Pollutant: Inorganic Chemicals/Products Pollutant Description: Alkalis | Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| 30 | 405m S | Incident Date: 20/02/2002 Incident Identification: 59475 Pollutant: Inorganic Chemicals/Products Pollutant Description: Ammonia Solutions | Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor) |
| 31 | 412m NE | Incident Date: 15/05/2014 Incident Identification: 1235346 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |



| ID | Location | Details | |
|----|----------|---|---|
| 32 | 429m SE | Incident Date: 09/04/2003 Incident Identification: 149881 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant) |
| N | 439m SE | Incident Date: 12/07/2001 Incident Identification: 15774 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| N | 439m SE | Incident Date: 12/07/2001 Incident Identification: 15774 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| 34 | 444m SE | Incident Date: 14/01/2015 Incident Identification: 1306549 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact) |
| 37 | 468m S | Incident Date: 10/11/2003 Incident Identification: 200717 Pollutant: Other Pollutant Pollutant Description: Noise | Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |
| 38 | 483m S | Incident Date: 05/04/2013 Incident Identification: 1099781 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke | Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor) |

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

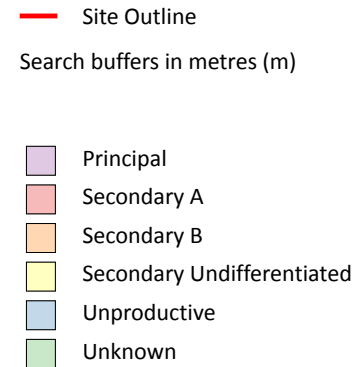
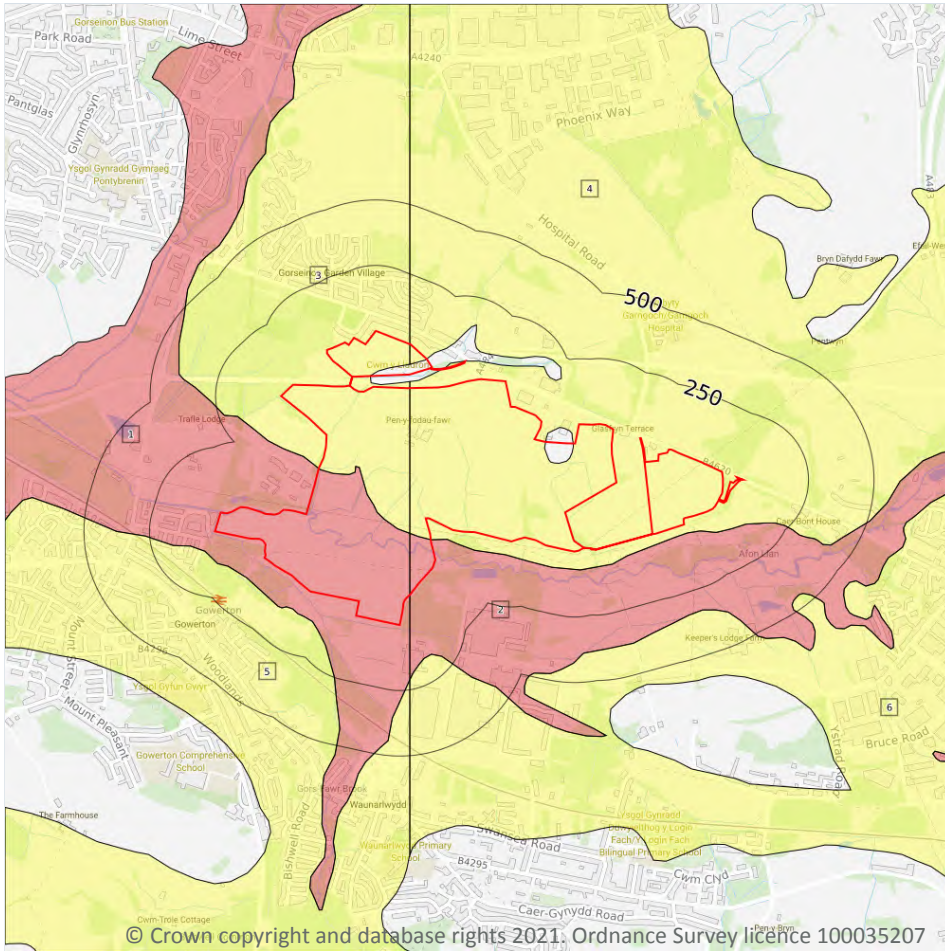
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

6

Aquifer status of groundwater held rights within superficial geology.

Features are displayed on the Hydrogeology map on **page 99**

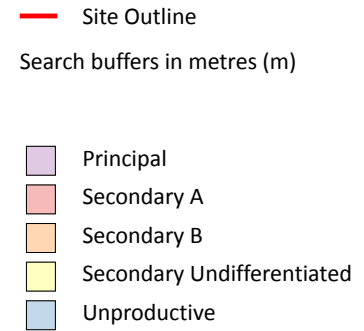
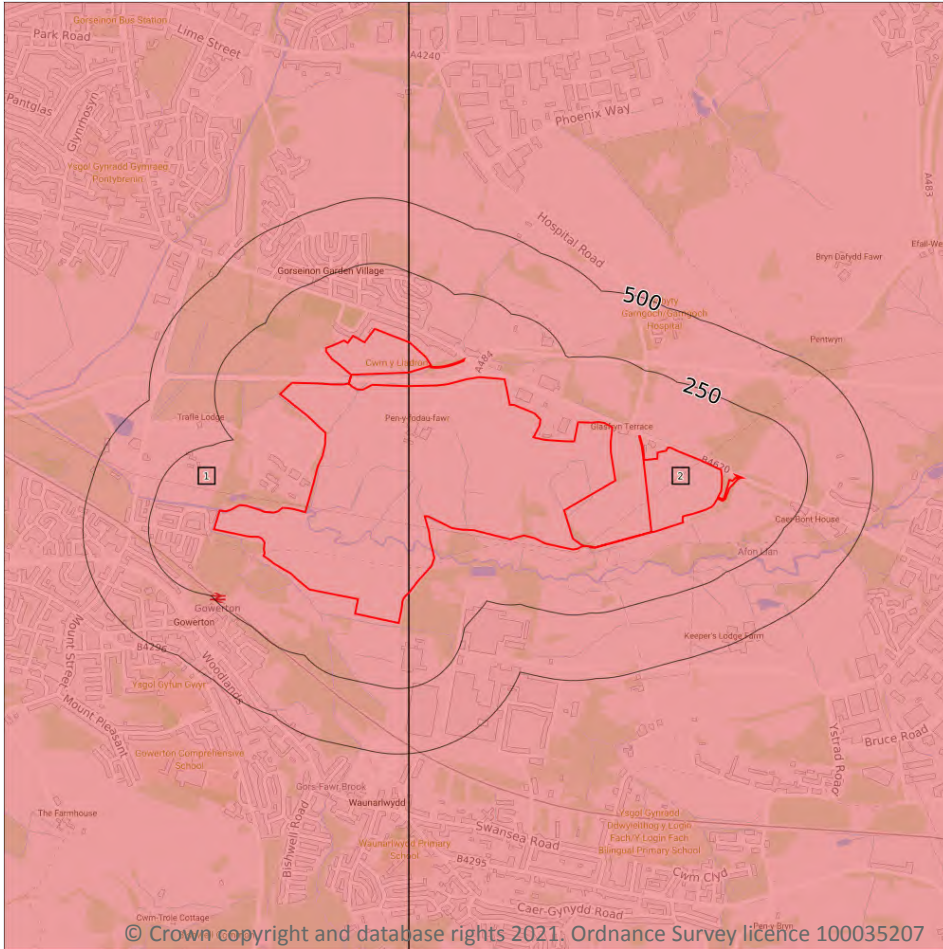
| ID | Location | Designation | Description |
|----|----------|-------------|--|
| 1 | On site | Secondary A | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers |
| 2 | On site | Secondary A | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers |

| ID | Location | Designation | Description |
|----|----------|----------------------------|--|
| 3 | On site | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 4 | On site | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 5 | 85m SW | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 6 | 158m SE | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 101**

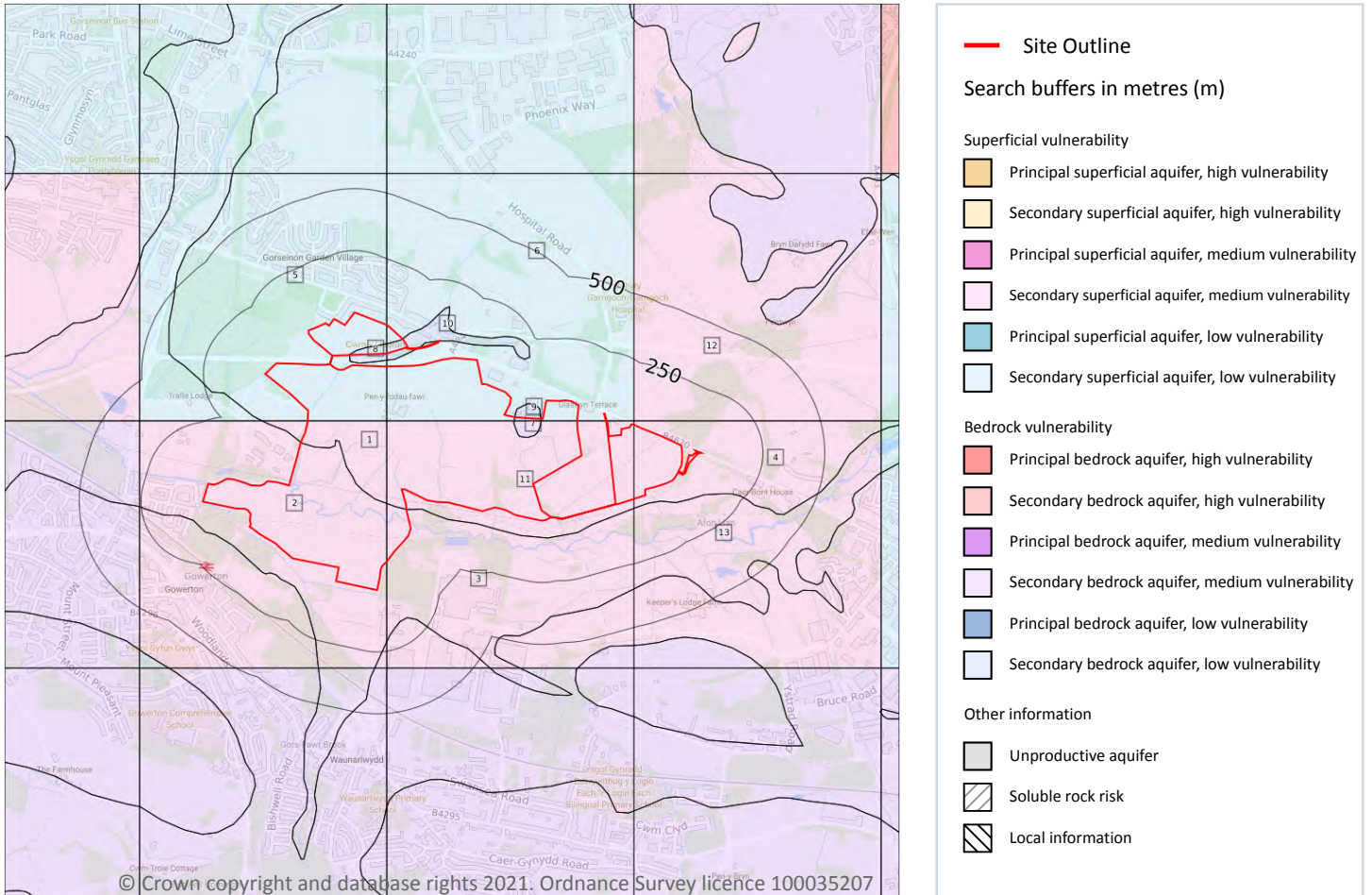
| ID | Location | Designation | Description |
|----|----------|-------------|--|
| 1 | On site | Secondary A | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers |
| 2 | On site | Secondary A | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers |



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

13

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 103**



| ID | Location | Summary | Soil / surface | Superficial geology | Bedrock geology |
|----|----------|---|--|---|---|
| 1 | On site | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 2 | On site | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 3 | On site | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 4 | On site | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 5 | On site | Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 6 | On site | Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |



| ID | Location | Summary | Soil / surface | Superficial geology | Bedrock geology |
|----|----------|---|---|---|---|
| 7 | On site | Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 8 | On site | Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer | Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 9 | On site | Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer | Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 10 | On site | Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer | Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 11 | On site | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 12 | 14m N | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: <40% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |
| 13 | 34m S | Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer | Leaching class: High Infiltration value: 40- 70% Dilution value: >550mm/year | Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium | Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures |



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site

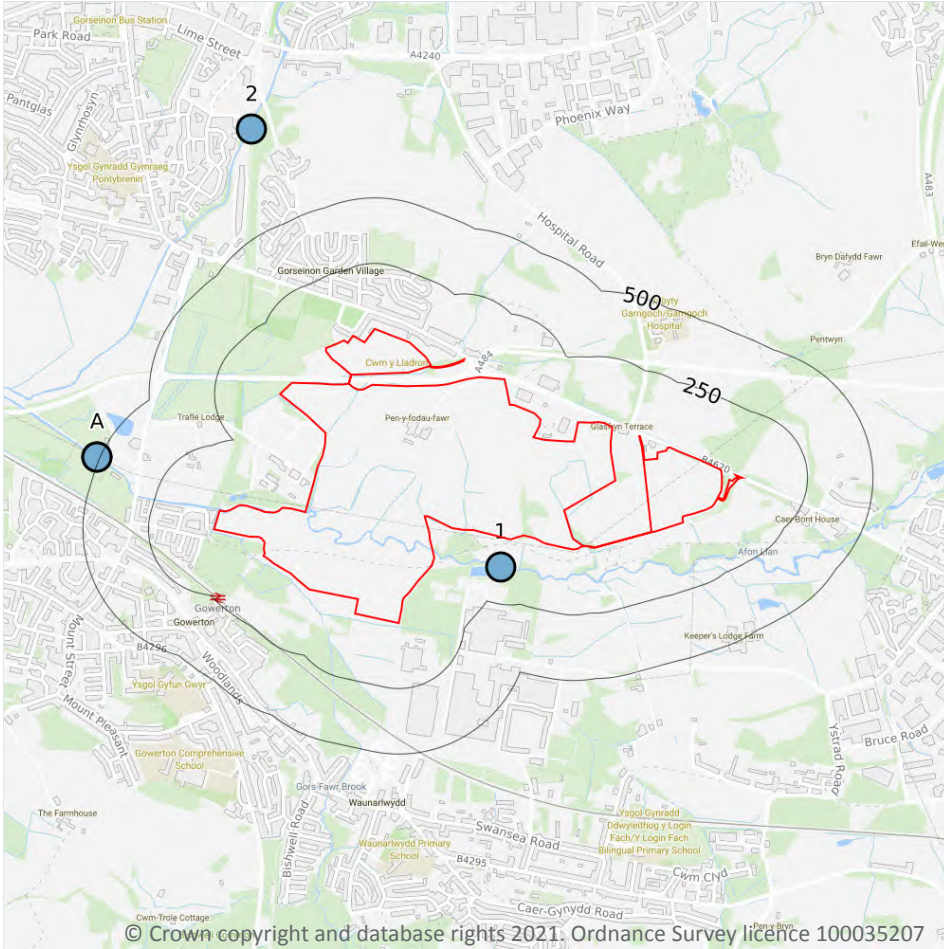
0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

5

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 107**

| ID | Location | Details | |
|----|----------|---|--|
| 1 | 110m S | Status: Historical Licence No: 22/59/4/0029 Details: Non-Evaporative Cooling Direct Source: EAW Surface Water Point: AFON LLAN NEAR WAUNARLWYDD Data Type: Point Name: Alcoa Manufacturing (GB) Ltd Easting: 260350 Northing: 196530 | Annual Volume (m ³): 763728 Max Daily Volume (m ³): 2182.08 Original Application No: - Original Start Date: 28/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/02/1966 Version End Date: - |
| A | 510m NW | Status: Historical Licence No: 22/59/4/0085 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: AFON LLAN AT LLWCHWR Data Type: Point Name: Bromham Leisure Ltd Easting: 258810 Northing: 196950 | Annual Volume (m ³): 22730 Max Daily Volume (m ³): 170.5 Original Application No: - Original Start Date: 23/10/1997 Expiry Date: - Issue No: 101 Version Start Date: 04/09/2008 Version End Date: - |
| A | 510m NW | Status: Active Licence No: 22/59/4/0085 Details: Make-up or Top-up Water - High Direct Source: - Point: - Data Type: Point Name: - Easting: 258810 Northing: 196950 | Annual Volume (m ³): 22,730 Max Daily Volume (m ³): 340.80 Original Application No: - Original Start Date: 2008-09-04 00:00:00.0000000 Expiry Date: - Issue No: - Version Start Date: - Version End Date: - |
| 2 | 877m NW | Status: Historical Licence No: 22/59/4/0053 Details: General use relating to Secondary Category (Medium Loss) Direct Source: EAW Surface Water Point: RIVER LLIW AT POINT C Data Type: Point Name: British Steel Plc Easting: 259400 Northing: 198200 | Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 04/01/2001 Version End Date: - |



| ID | Location | Details | |
|----|----------|---|---|
| - | 1939m NE | Status: Historical Licence No: 22/59/4/0087 Details: Lake & Pond Throughflow Direct Source: EAW Surface Water Point: AFON LLAN, PENLLERGAER, SWANSEA Data Type: Point Name: Bellway Homes (Wales Division) Easting: 262780 Northing: 198090 | Annual Volume (m ³): 3,153,600 Max Daily Volume (m ³): 8640 Original Application No: - Original Start Date: 28/06/2000 Expiry Date: 27/6/2015 Issue No: 1 Version Start Date: 01/04/2004 Version End Date: - |

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

| | |
|-----------------------------|----------|
| Records within 2000m | 0 |
|-----------------------------|----------|

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

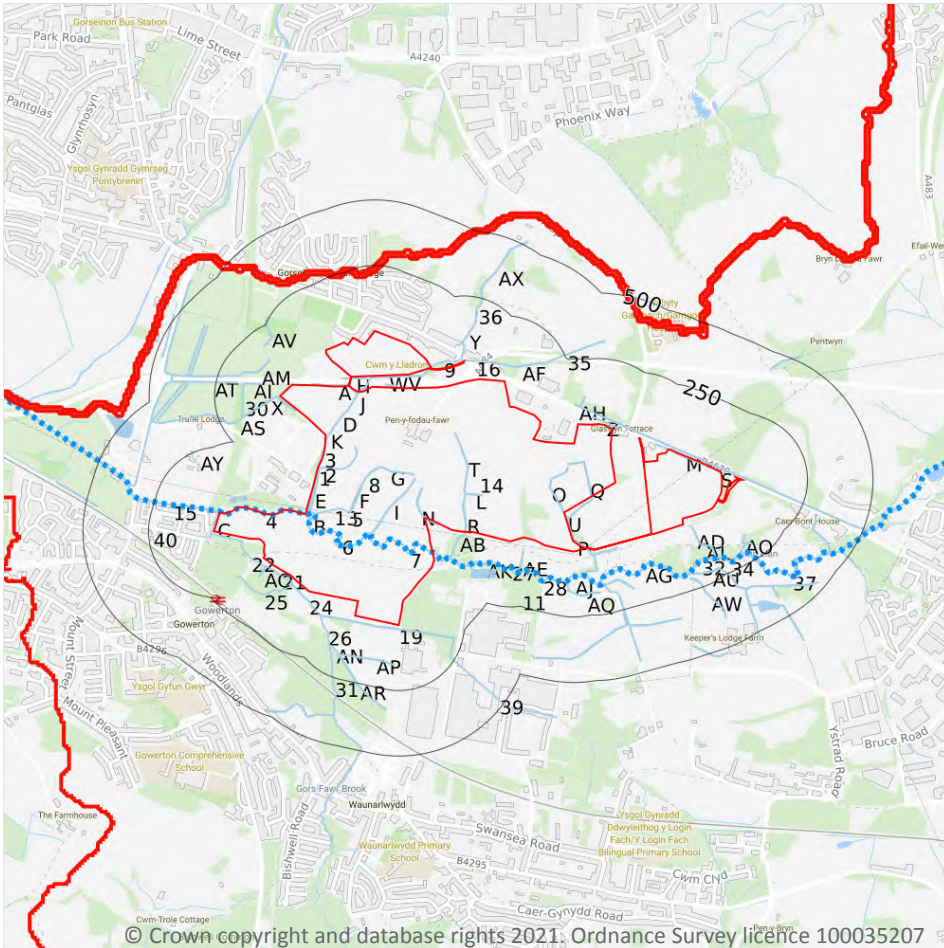
5.10 Source Protection Zones (confined aquifer)

| | |
|----------------------------|----------|
| Records within 500m | 0 |
|----------------------------|----------|

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

140

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 110**

| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|------|
| 1 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------|
| 2 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 3 | On site | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| 4 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| 5 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 6 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| 7 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| 8 | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| 9 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 13 | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| A | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------------|
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| B | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| C | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| D | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| E | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| F | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| F | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| G | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| H | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| I | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| J | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| J | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|------|
| J | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| J | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| K | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| K | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| L | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| L | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| L | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| M | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| N | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| O | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| Q | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| R | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------|
| S | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| T | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| U | On site | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| U | On site | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| 15 | 1m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| J | 1m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| U | 4m E | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 16 | 4m N | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| W | 4m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| V | 5m S | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| W | 5m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| V | 5m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| X | 7m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------------|
| S | 9m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| J | 10m S | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| C | 10m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| Y | 10m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| Z | 11m NE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| C | 12m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| C | 12m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| C | 13m S | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| C | 13m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| C | 14m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| U | 14m SE | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| 19 | 15m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 21 | 15m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------------|
| P | 16m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 22 | 16m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| P | 17m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 19m S | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| 24 | 20m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| 25 | 20m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AB | 21m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AB | 21m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AC | 22m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AD | 24m E | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 31m S | Lake, loch or reservoir. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 37m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AE | 48m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------------|
| AB | 60m E | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AB | 60m E | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AF | 61m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AH | 66m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AH | 66m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AB | 67m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AB | 69m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 26 | 83m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| AI | 88m NW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 27 | 93m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AJ | 94m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AK | 94m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AG | 97m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------|
| P | 98m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AL | 102m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AK | 109m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 28 | 111m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AJ | 116m S | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| AM | 122m NW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AL | 126m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 131m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 132m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 132m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 137m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 30 | 142m W | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AJ | 143m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------------|
| AI | 146m W | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AN | 147m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AO | 147m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AP | 147m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 31 | 149m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Gors-Fawr Brook |
| 32 | 150m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AL | 151m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AJ | 152m S | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |
| AN | 152m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AQ | 154m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AN | 159m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AN | 159m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AN | 160m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------|
| AR | 160m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AI | 164m NW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AS | 168m SW | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| AT | 169m W | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AO | 174m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AO | 174m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 176m S | Lake, loch or reservoir. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AT | 176m NW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 34 | 178m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AU | 181m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AV | 182m NW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| P | 189m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AS | 195m SW | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |



| ID | Location | Type of water feature | Ground level | Permanence | Name |
|----|----------|---|-------------------|---|-----------|
| 35 | 198m NE | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| 36 | 204m N | Lake, loch or reservoir. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AW | 204m S | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 37 | 206m SE | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | Afon Llan |
| AX | 208m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AY | 228m N | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| 39 | 231m SE | Inland river not influenced by normal tidal action. | Not provided | Watercourse contains water year round (in normal circumstances) | - |
| 40 | 234m W | Inland river not influenced by normal tidal action. | On ground surface | Watercourse contains water year round (in normal circumstances) | - |
| AS | 248m W | Inland river not influenced by normal tidal action. | Underground | Watercourse contains water year round (in normal circumstances) | - |

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

49

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 110**

This data is sourced from the Ordnance Survey.



6.3 WFD Surface water body catchments

| | |
|------------------------|----------|
| Records on site | 1 |
|------------------------|----------|

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 110**

| ID | Location | Type | Water body catchment | Water body ID | Operational catchment | Management catchment |
|----|----------|--------------------|----------------------------------|----------------|-----------------------|------------------------------|
| 11 | On site | River WB catchment | Llan - headwaters to tidal limit | GB110059032070 | Loughor | Carmarthen Bay and the Gower |

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

| | |
|---------------------------|----------|
| Records identified | 1 |
|---------------------------|----------|

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 110**

| ID | Location | Type | Name | Water body ID | Overall rating | Chemical rating | Ecological rating | Year |
|----|----------|-------|----------------------------------|----------------|----------------|-----------------|-------------------|------|
| 10 | On site | River | Llan - headwaters to tidal limit | GB110059032070 | Good | Good | Good | 2016 |

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

| | |
|------------------------|----------|
| Records on site | 1 |
|------------------------|----------|

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 110**

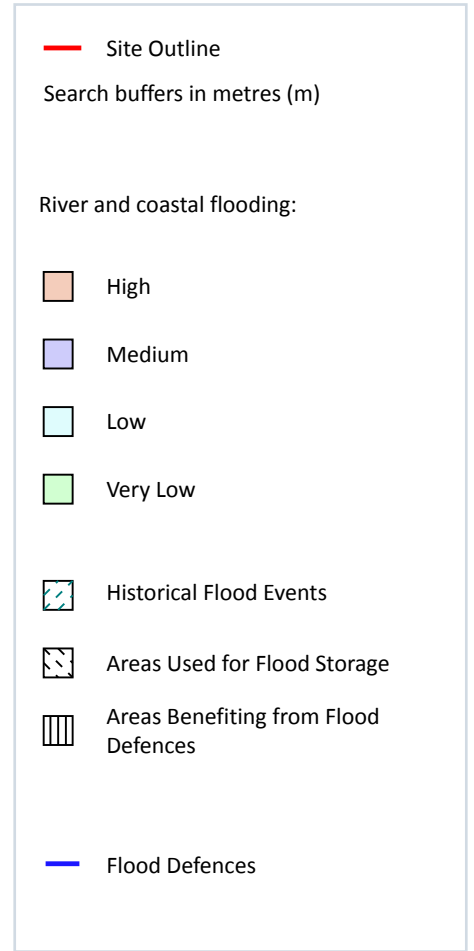
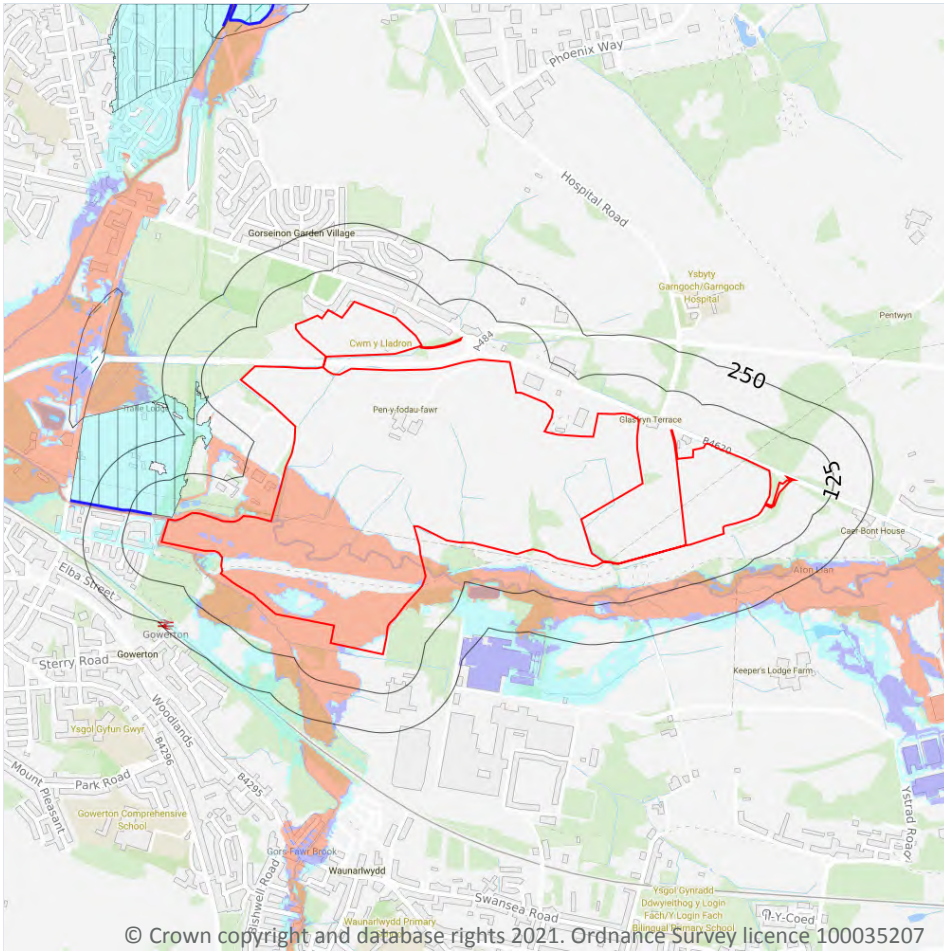


| ID | Location | Name | Water body ID | Overall rating | Chemical rating | Quantitative | Year |
|----|----------|--|----------------|----------------|-----------------|--------------|------|
| 14 | On site | Carmarthen Carboniferous Coal Measures | GB41002G200600 | Poor | Poor | Good | 2017 |

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m

643

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 124**

| Distance | Flood risk category |
|----------------|---------------------|
| On site | High |
| 0 - 50m | High |

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

| | |
|----------------------------|----------|
| Records within 250m | 0 |
|----------------------------|----------|

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

| | |
|----------------------------|----------|
| Records within 250m | 1 |
|----------------------------|----------|

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

Features are displayed on the River and coastal flooding map on **page 124**

| ID | Location | Update |
|----|----------|------------|
| N | 56m W | 01/09/2021 |

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

| | |
|----------------------------|----------|
| Records within 250m | 1 |
|----------------------------|----------|

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 124**

| ID | Location | |
|----|----------|-------------------------------------|
| M | 9m N | Area benefiting from flood defences |



This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

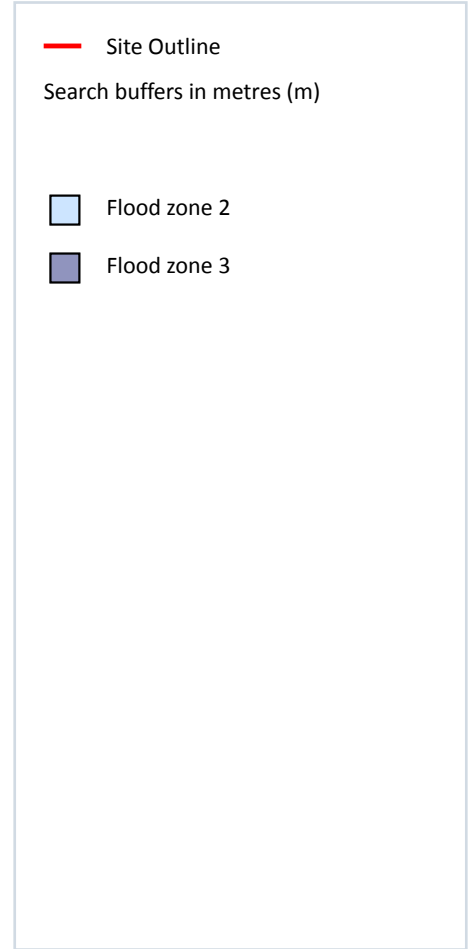
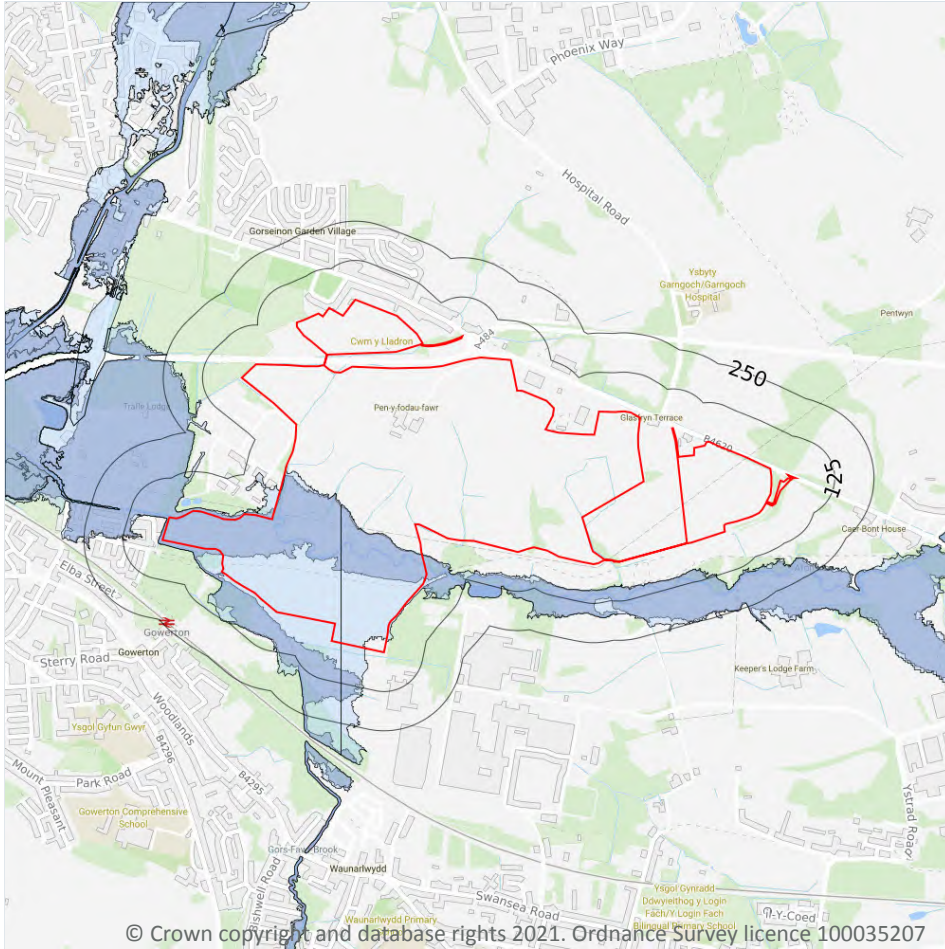
0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones



7.6 Flood Zone 2

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 124**

| Location | Type |
|----------|----------------------------------|
| On site | Zone 2 - (Fluvial /Tidal Models) |

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

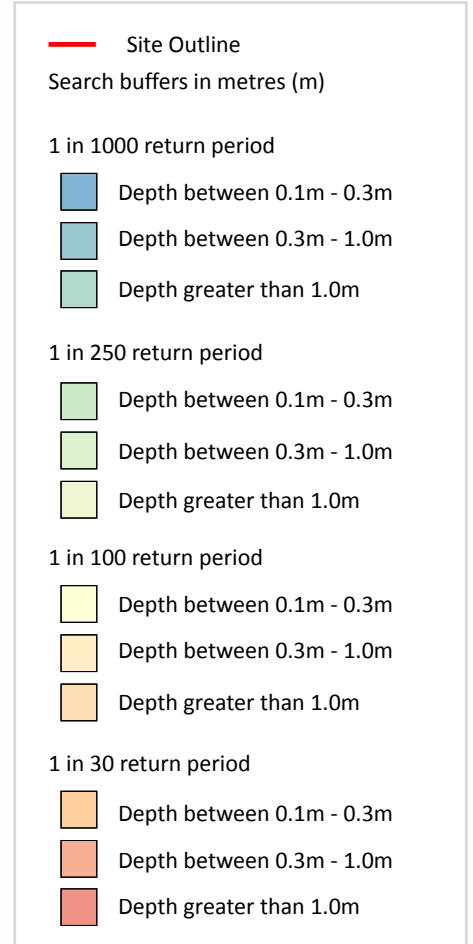
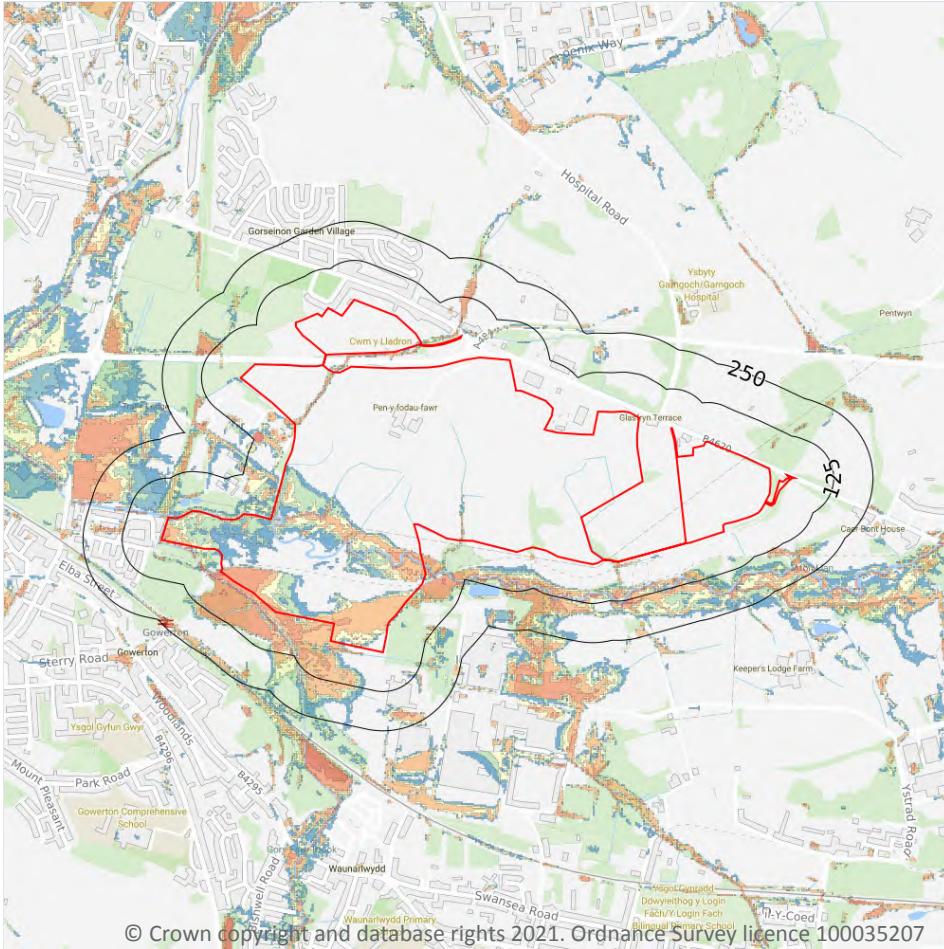
Features are displayed on the River and coastal flooding map on **page 124**

| Location | Type |
|----------|---------------------------|
| On site | Zone 3 - (Fluvial Models) |

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 129**

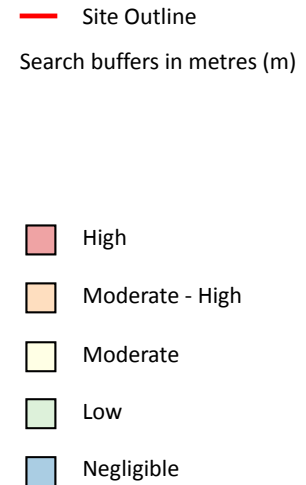
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

a site. The table below shows the maximum flood depths for a range of return periods for the site.

| Return period | Maximum modelled depth |
|----------------|------------------------|
| 1 in 1000 year | Greater than 1.0m |
| 1 in 250 year | Greater than 1.0m |
| 1 in 100 year | Greater than 1.0m |
| 1 in 30 year | Greater than 1.0m |

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

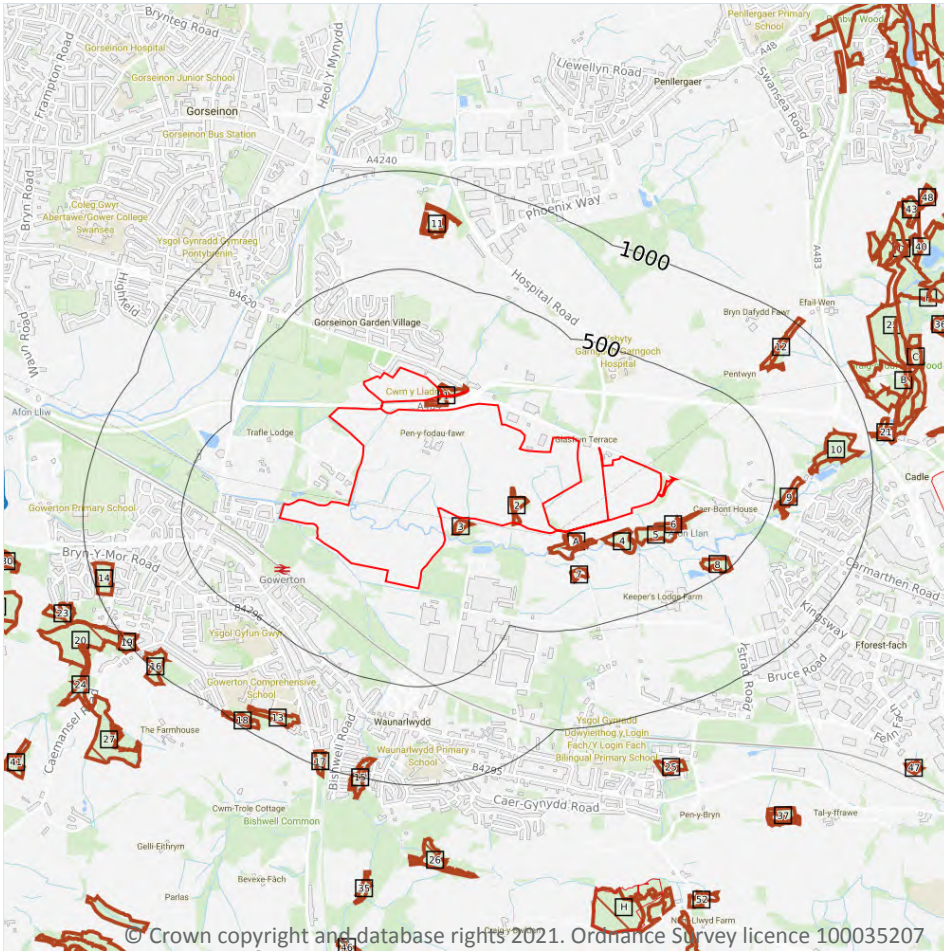
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 131**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- / Sites of Special Scientific Interest (SSSI)
- X Conserved wetland sites (Ramsar sites)
- + Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- + Local Nature Reserves (LNR)
- / Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

3

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 132**

| ID | Location | Name | Data source |
|----|----------|---------------------------------|-------------------------|
| 33 | 1392m W | Burry Inlet And Loughor Estuary | Natural Resources Wales |



| ID | Location | Name | Data source |
|----|----------|---------------------------------|-------------------------|
| 39 | 1679m NE | Penplas Grasslands | Natural Resources Wales |
| - | 1871m W | Burry Inlet And Loughor Estuary | Natural Resources Wales |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

1

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

Features are displayed on the Environmental designations map on **page 132**

| ID | Location | Site | Details |
|----|----------|---|---|
| E | 1391m W | Name: Burry Inlet Site status: - Data source: Natural Resources Wales | Overview: Burry Inlet is a large estuarine complex located between the Gower Peninsula and Llanelli in South Wales. It includes extensive areas of intertidal sand and mud flats, together with large sand dune systems at the mouth of the estuary. The site contains the largest continuous area of saltmarsh in Wales (2,200 ha). The Burry Inlet regularly supports large numbers of wildfowl and waders. Ramsar criteria: - |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

1

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

Features are displayed on the Environmental designations map on **page 132**



| ID | Location | Name | Features of interest | Habitat description | Data source |
|----|----------|--|---|---|-------------------------|
| 32 | 1392m W | Carmarthen Bay and Estuaries / Bae Caerfyrddin ac Aberoedd | Subtidal sandbanks; Estuaries; Intertidal mudflats and sandflats; Lagoons; Shallow inlets and bays; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Dunes with sea-buckthorn; Sea caves; Sea lamprey; River lamprey; Allis shad; Twaite shad; Lesser horseshoe bat; Greater horseshoe bat; Otter; Grey seal. | Shingle, Sea cliffs, Islets; Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes | Natural Resources Wales |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

1

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

Features are displayed on the Environmental designations map on **page 132**

| ID | Location | Name | Species of interest | Habitat description | Data source |
|----|----------|-------------|--|---|-------------|
| E | 1392m W | Burry Inlet | Common shelduck; Eurasian wigeon; Eurasian teal; Northern pintail; Northern shoveler; Eurasian oystercatcher; Grey plover; Red knot; Eurasian curlew; Common redshank; Ruddy turnstone; Dunlin | Coniferous woodland; Salt marshes, Salt pastures, Salt steppes; Shingle, Sea cliffs, Islets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Coastal sand dunes, Sand beaches, Machair | |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.6 Local Nature Reserves (LNR)

Records within 2000m

2

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 132**

| ID | Location | Name | Data source |
|----|----------|---------------|-------------------------|
| 28 | 1297m E | CADLE HEATH | Natural Resources Wales |
| H | 1764m SE | CWMLLWYD WOOD | Natural Resources Wales |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

70

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 132**

| ID | Location | Name | Woodland Type |
|----|----------|---------|--------------------------------|
| 1 | On site | Unknown | Ancient Semi Natural Woodland |
| 2 | On site | Unknown | Restored Ancient Woodland Site |
| 3 | 12m S | Unknown | Ancient Semi Natural Woodland |
| A | 17m S | Unknown | Restored Ancient Woodland Site |
| A | 24m S | Unknown | Ancient Semi Natural Woodland |
| 4 | 72m S | Unknown | Restored Ancient Woodland Site |
| 5 | 85m S | Unknown | Restored Ancient Woodland Site |
| 6 | 112m S | Unknown | Ancient Semi Natural Woodland |
| 7 | 201m S | Unknown | Ancient Semi Natural Woodland |
| 8 | 383m SE | Unknown | Restored Ancient Woodland Site |



| ID | Location | Name | Woodland Type |
|----|----------|---------|---|
| 9 | 522m E | Unknown | Ancient Semi Natural Woodland |
| 10 | 679m E | Unknown | Ancient Semi Natural Woodland |
| 11 | 682m N | Unknown | Ancient Semi Natural Woodland |
| 12 | 709m NE | Unknown | Restored Ancient Woodland Site |
| 13 | 820m SW | Unknown | Ancient Semi Natural Woodland |
| 14 | 880m W | Unknown | Restored Ancient Woodland Site |
| 15 | 897m S | Unknown | Ancient Semi Natural Woodland |
| 16 | 901m SW | Unknown | Ancient Semi Natural Woodland |
| 17 | 921m S | Unknown | Ancient Semi Natural Woodland |
| 18 | 934m SW | Unknown | Ancient Semi Natural Woodland |
| 19 | 937m SW | Unknown | Ancient Semi Natural Woodland |
| 20 | 994m SW | Unknown | Ancient Semi Natural Woodland |
| 21 | 1015m E | Unknown | Ancient Semi Natural Woodland |
| 22 | 1054m NE | Unknown | Restored Ancient Woodland Site |
| 23 | 1083m SW | Unknown | Ancient Semi Natural Woodland |
| B | 1132m E | Unknown | Restored Ancient Woodland Site |
| 24 | 1186m SW | Unknown | Ancient Semi Natural Woodland |
| B | 1243m E | Unknown | Ancient Semi Natural Woodland |
| 25 | 1248m S | Unknown | Ancient Semi Natural Woodland |
| 26 | 1273m S | Unknown | Ancient Semi Natural Woodland |
| 27 | 1278m SW | Unknown | Ancient Semi Natural Woodland |
| 29 | 1301m E | Unknown | Ancient Semi Natural Woodland |
| C | 1330m NE | Unknown | Plantation on Ancient Woodland Site |
| 30 | 1345m W | Unknown | Ancient Semi Natural Woodland |
| C | 1361m NE | Unknown | Ancient Semi Natural Woodland |
| 31 | 1379m W | Unknown | Restored Ancient Woodland Site |
| D | 1385m NE | Unknown | Ancient Woodland Site of Unknown Category |
| 34 | 1443m W | Unknown | Restored Ancient Woodland Site |



| ID | Location | Name | Woodland Type |
|----|----------|---------|---|
| 35 | 1462m S | Unknown | Ancient Semi Natural Woodland |
| D | 1498m NE | Unknown | Restored Ancient Woodland Site |
| D | 1499m NE | Unknown | Restored Ancient Woodland Site |
| D | 1500m NE | Unknown | Restored Ancient Woodland Site |
| 36 | 1509m NE | Unknown | Ancient Semi Natural Woodland |
| D | 1512m NE | Unknown | Ancient Woodland Site of Unknown Category |
| F | 1560m NE | Unknown | Restored Ancient Woodland Site |
| F | 1581m NE | Unknown | Plantation on Ancient Woodland Site |
| 37 | 1658m SE | Unknown | Ancient Semi Natural Woodland |
| - | 1660m W | Unknown | Restored Ancient Woodland Site |
| G | 1676m NE | Unknown | Ancient Semi Natural Woodland |
| 40 | 1679m NE | Unknown | Restored Ancient Woodland Site |
| G | 1682m NE | Unknown | Restored Ancient Woodland Site |
| 41 | 1710m SW | Unknown | Restored Ancient Woodland Site |
| G | 1716m NE | Unknown | Plantation on Ancient Woodland Site |
| - | 1744m W | Unknown | Restored Ancient Woodland Site |
| 43 | 1747m NE | Unknown | Restored Ancient Woodland Site |
| 44 | 1773m NE | Unknown | Restored Ancient Woodland Site |
| H | 1779m SE | Unknown | Ancient Semi Natural Woodland |
| - | 1822m SW | Unknown | Ancient Semi Natural Woodland |
| 46 | 1824m S | Unknown | Ancient Semi Natural Woodland |
| 47 | 1840m SE | Unknown | Ancient Semi Natural Woodland |
| 48 | 1843m NE | Unknown | Restored Ancient Woodland Site |
| H | 1868m S | Unknown | Ancient Semi Natural Woodland |
| H | 1875m S | Unknown | Ancient Semi Natural Woodland |
| - | 1881m NE | Unknown | Ancient Semi Natural Woodland |
| - | 1886m NE | Unknown | Plantation on Ancient Woodland Site |
| - | 1887m E | Unknown | Ancient Semi Natural Woodland |



| ID | Location | Name | Woodland Type |
|----|----------|---------|--------------------------------|
| - | 1925m NE | Unknown | Ancient Semi Natural Woodland |
| 52 | 1942m S | Unknown | Ancient Semi Natural Woodland |
| - | 1960m SW | Unknown | Restored Ancient Woodland Site |
| - | 1960m SW | Unknown | Ancient Semi Natural Woodland |

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.



10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.



10.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

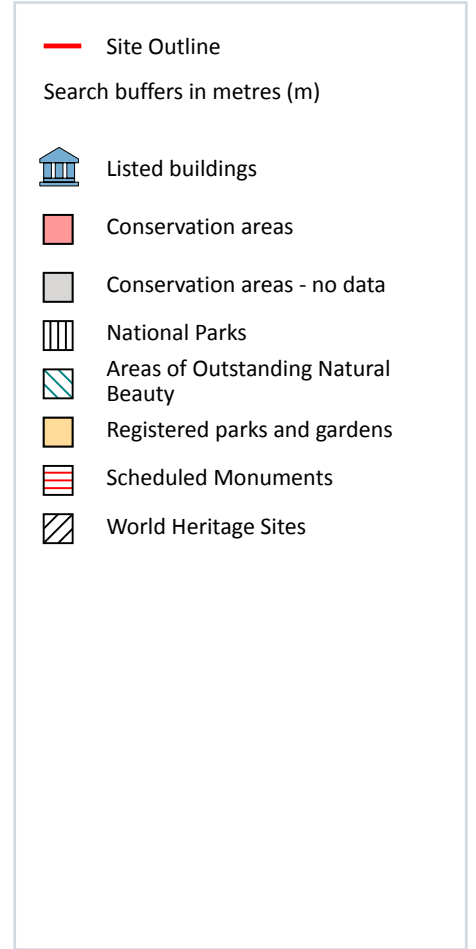
0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations



11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

1

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

Features are displayed on the Visual and cultural designations map on **page 142**

| ID | Location | Ancient monument name | Reference number |
|----|----------|-----------------------------------|------------------|
| 1 | 74m NE | Mynydd Carn-Goch Roman Earthworks | 3576 |

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

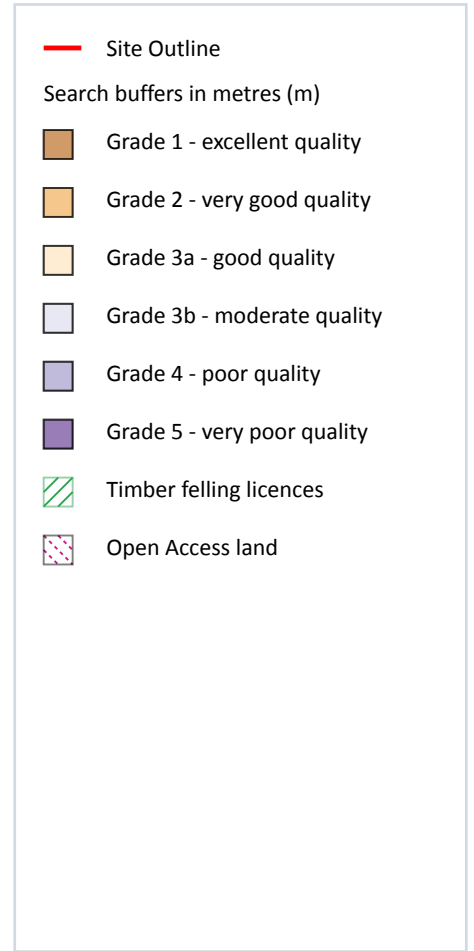
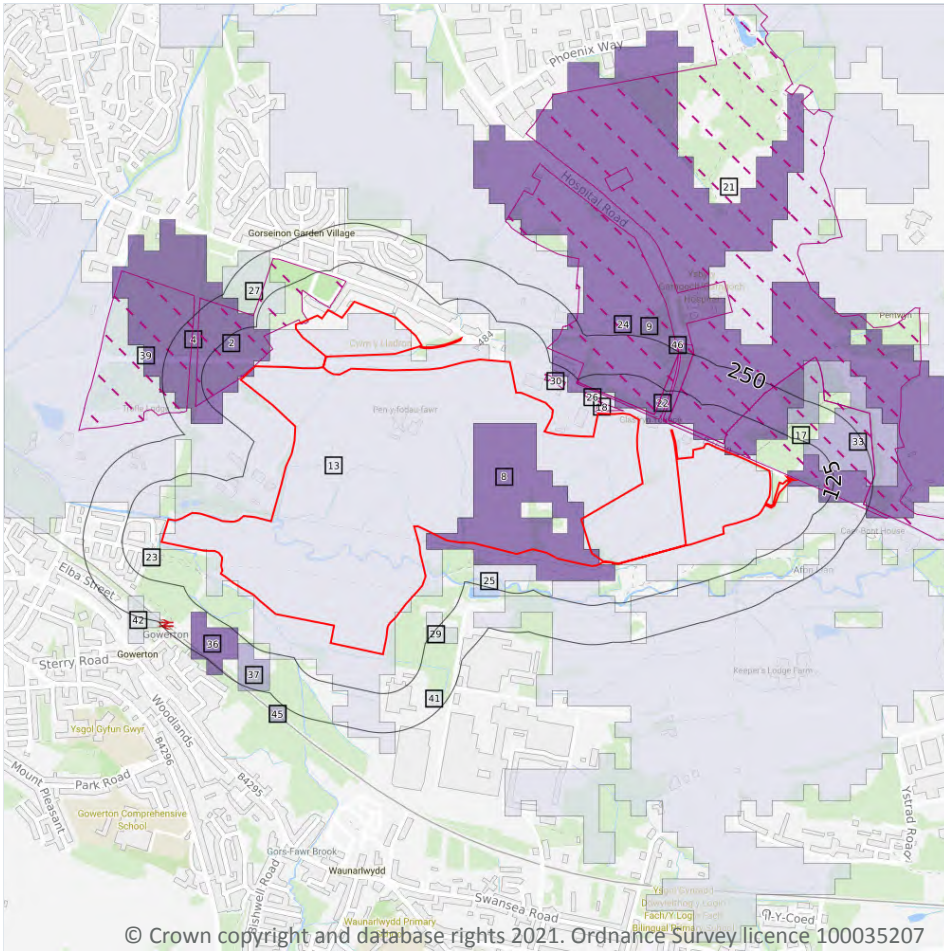
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m

14

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 145**

| ID | Location | Classification | Description |
|----|----------|----------------|-------------------------------------|
| 4 | On site | Grade 5 | Very poor quality agricultural land |
| 8 | On site | Grade 5 | Very poor quality agricultural land |
| 9 | On site | Grade 5 | Very poor quality agricultural land |

| ID | Location | Classification | Description |
|-----------|----------------|-----------------|---|
| 13 | On site | Grade 3b | Moderate quality agricultural land |
| 23 | 24m S | Grade 3b | Moderate quality agricultural land |
| 25 | 35m S | Grade 3b | Moderate quality agricultural land |
| 27 | 48m NW | Grade 3b | Moderate quality agricultural land |
| 29 | 66m SE | Grade 3b | Moderate quality agricultural land |
| 33 | 84m E | Grade 4 | Poor quality agricultural land |
| 36 | 110m SW | Grade 5 | Very poor quality agricultural land |
| 37 | 117m SW | Grade 4 | Poor quality agricultural land |
| 41 | 181m SE | Grade 3b | Moderate quality agricultural land |
| 42 | 182m S | Grade 3b | Moderate quality agricultural land |
| 45 | 248m SW | Grade 4 | Poor quality agricultural land |

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

11

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

Features are displayed on the Agricultural designations map on **page 145**

| ID | Location | Name | Classification | Other relevant legislation |
|----------|----------------|------|--|----------------------------|
| 2 | On site | - | Open Access Other Statutory Access Land | - |
| 17 | 6m NE | - | Open Access Open Country | - |
| 18 | 7m N | - | Open Access Other Statutory Access Land | - |
| 19 | 9m NW | - | Open Access Other Statutory Access Land | - |
| 21 | 20m NE | - | Open Access Other Statutory Access Land | - |
| 22 | 22m NE | - | Open Access Open Country | - |
| 24 | 31m NE | - | Open Access Other Statutory Access Land | - |
| 26 | 38m N | - | Open Access Other Statutory Access Land | - |



| ID | Location | Name | Classification | Other relevant legislation |
|----|----------|------|---|----------------------------|
| 30 | 67m N | - | Open Access Other Statutory Access Land | - |
| 39 | 165m W | - | Open Access Other Statutory Access Land | - |
| 46 | 250m N | - | Open Access Open Country | - |

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

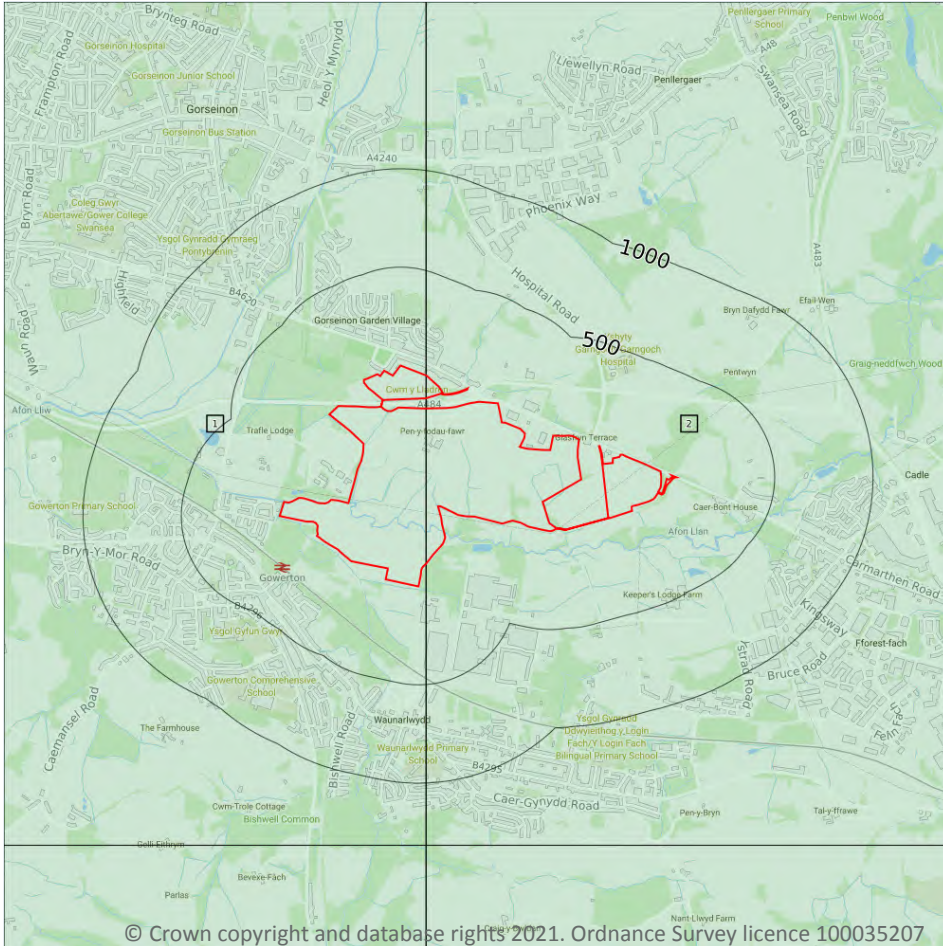
0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

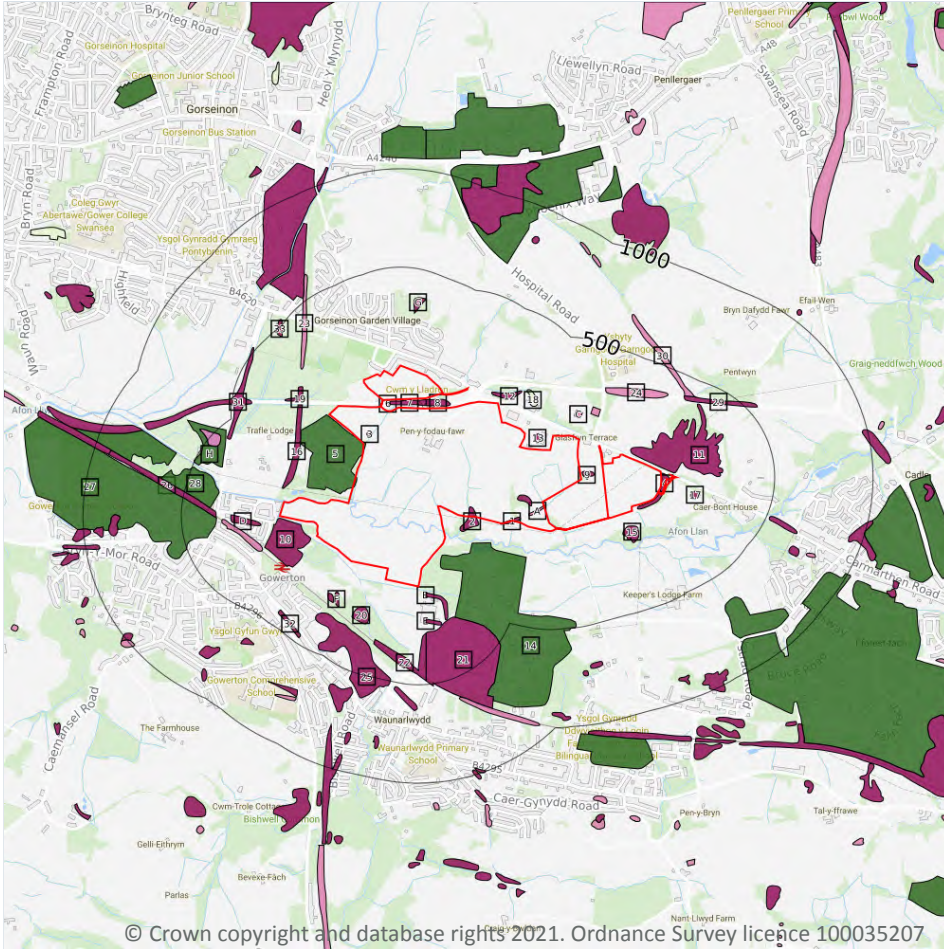
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 149**

| ID | Location | Artificial | Superficial | Bedrock | Mass movement | Sheet No. |
|----|----------|------------|-------------|---------|---------------|-----------|
| 1 | On site | Full | Full | Full | No coverage | SS59NE |
| 2 | On site | Full | Full | Full | Full | SS69NW |

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

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14.2 Artificial and made ground (10k)

Records within 500m

49

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 150**

| ID | Location | LEX Code | Description | Rock description |
|----|----------|-----------|---------------------------|--------------------|
| 1 | On site | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 2 | On site | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 3 | On site | WGR-VOID | Worked Ground (Undivided) | Void |
| 4 | On site | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |



| ID | Location | LEX Code | Description | Rock description |
|----|----------|--------------|-------------------------------|----------------------------|
| 5 | On site | LSGR-UNKNOWN | Landscaped Ground (Undivided) | Unknown/unclassified Entry |
| A | On site | WGR-VOID | Worked Ground (Undivided) | Void |
| A | On site | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 6 | 7m S | WGR-VOID | Worked Ground (Undivided) | Void |
| 7 | 7m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 8 | 7m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 9 | 10m E | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 10 | 11m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 11 | 16m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 12 | 34m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 13 | 35m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 14 | 36m SE | LSGR-UNKNOWN | Landscaped Ground (Undivided) | Unknown/unclassified Entry |
| B | 47m SE | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| B | 51m SE | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 15 | 68m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 16 | 69m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| C | 98m N | WGR-VOID | Worked Ground (Undivided) | Void |
| D | 104m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 17 | 112m SE | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 18 | 131m NE | WMGR-ARTDP | Infilled Ground | Artificial Deposit |
| C | 144m NE | WGR-VOID | Worked Ground (Undivided) | Void |
| 19 | 150m NW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| E | 170m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| E | 170m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| F | 172m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| D | 176m SW | WGR-VOID | Worked Ground (Undivided) | Void |
| 20 | 176m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| F | 195m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |

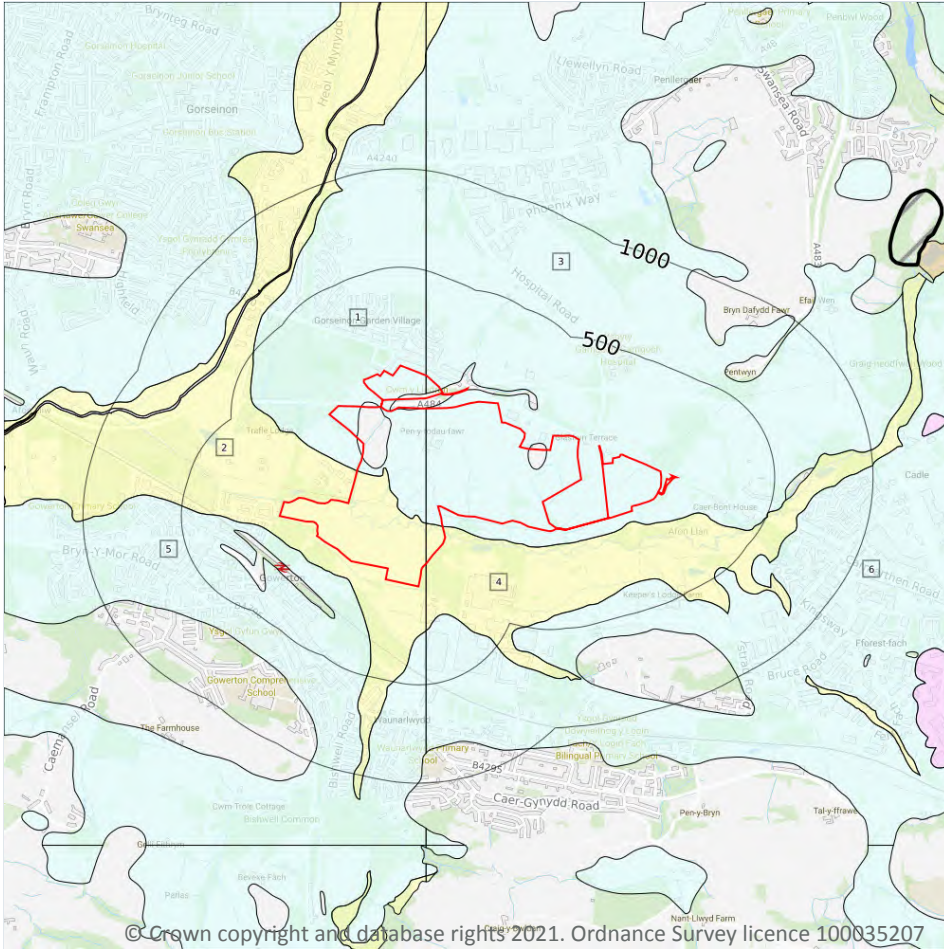


| ID | Location | LEX Code | Description | Rock description |
|----|----------|-------------|-------------------------------|----------------------------|
| 21 | 226m SE | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 22 | 240m S | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 23 | 263m NW | WGR-VOID | Worked Ground (Undivided) | Void |
| 24 | 271m N | WGR-VOID | Worked Ground (Undivided) | Void |
| G | 276m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 25 | 292m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 26 | 322m W | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 27 | 322m W | LSGR-UKNOWN | Landscaped Ground (Undivided) | Unknown/unclassified Entry |
| 28 | 329m W | LSGR-UKNOWN | Landscaped Ground (Undivided) | Unknown/unclassified Entry |
| H | 360m NW | LSGR-UKNOWN | Landscaped Ground (Undivided) | Unknown/unclassified Entry |
| G | 360m N | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 29 | 383m NE | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 30 | 398m NE | WGR-VOID | Worked Ground (Undivided) | Void |
| 31 | 399m W | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 32 | 413m SW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| H | 440m NW | WGR-VOID | Worked Ground (Undivided) | Void |
| 33 | 454m NW | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

6

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 153**

| ID | Location | LEX Code | Description | Rock description |
|----|----------|------------|--|-----------------------------|
| 1 | On site | TILLD-DMTN | Till, Devensian - Diamicton | Diamicton |
| 2 | On site | ALV-XCZSV | Alluvium - Clay, Silt, Sand And Gravel | Clay, Silt, Sand And Gravel |
| 3 | On site | TILLD-DMTN | Till, Devensian - Diamicton | Diamicton |



| ID | Location | LEX Code | Description | Rock description |
|----|----------|------------|--|-----------------------------|
| 4 | On site | ALV-XCZSV | Alluvium - Clay, Silt, Sand And Gravel | Clay, Silt, Sand And Gravel |
| 5 | 90m S | TILLD-DMTN | Till, Devensian - Diamicton | Diamicton |
| 6 | 181m SE | TILLD-DMTN | Till, Devensian - Diamicton | Diamicton |

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

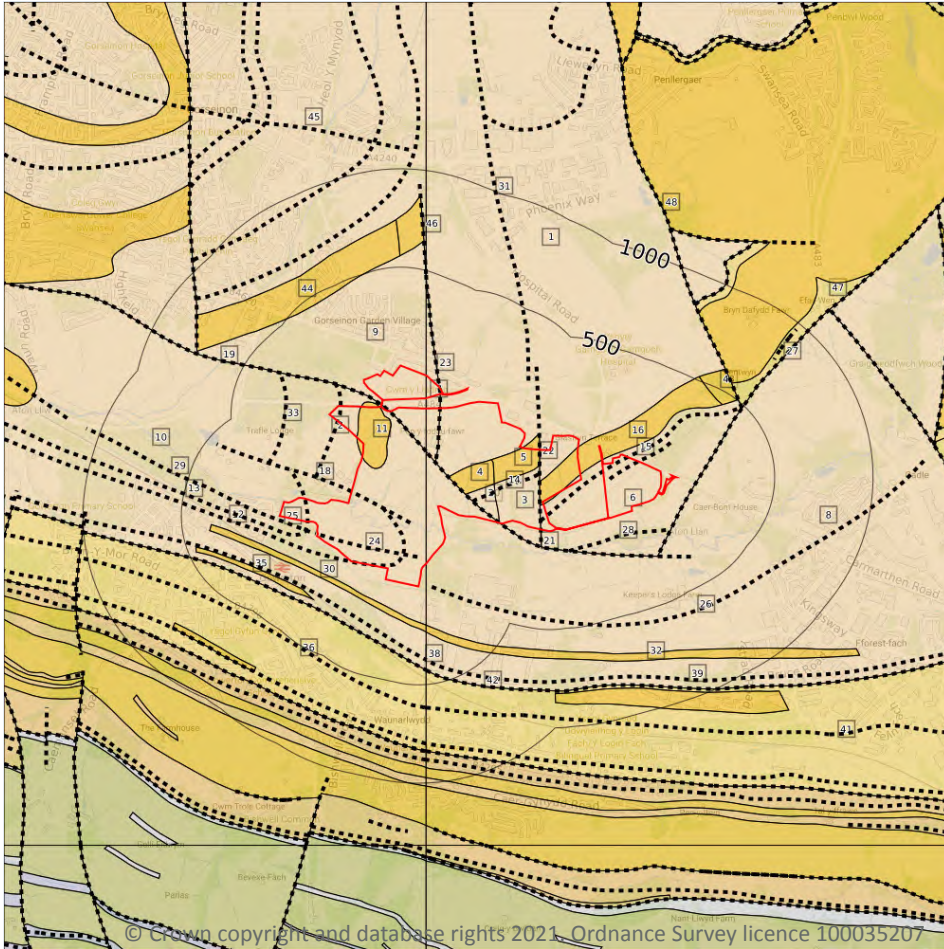
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (10k)
- Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

21

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 155**

| ID | Location | LEX Code | Description | Rock age |
|----|----------|----------|---|-----------------------|
| 1 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 3 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 4 | On site | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |

| ID | Location | LEX Code | Description | Rock age |
|----|----------|----------|---|-----------------------|
| 5 | On site | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 6 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 7 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 8 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 9 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 10 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 11 | On site | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 16 | On site | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 20 | On site | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 30 | 118m SW | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 32 | 200m S | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 35 | 265m SW | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 36 | 294m SW | SW-MDSS | Swansea Member - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 41 | 427m S | SW-MDSS | Swansea Member - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 43 | 437m NE | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 44 | 456m NW | GDB-SDST | Grovesend Formation - Sandstone | Westphalian D Sub-age |
| 45 | 478m N | GDB-MDSS | Grovesend Formation - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |
| 47 | 484m NE | SW-MDSS | Swansea Member - Mudstone, Siltstone And Sandstone | Westphalian D Sub-age |

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

27

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 155**

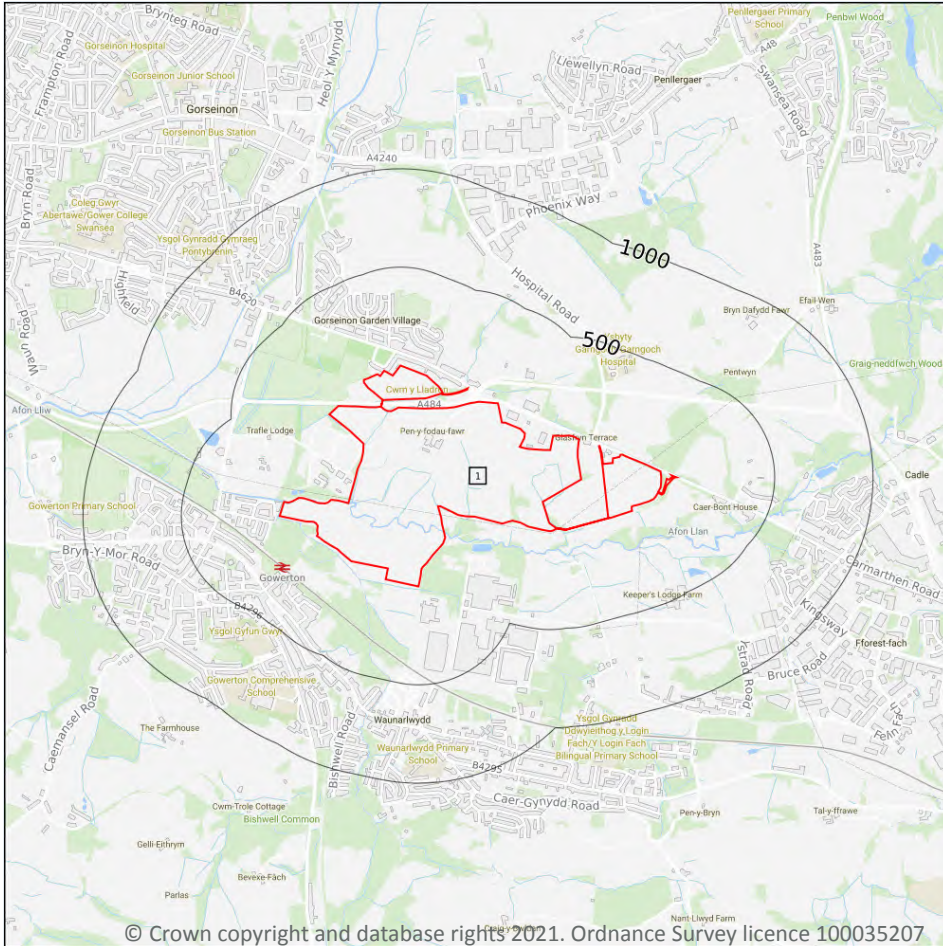


| ID | Location | Category | Description |
|----|----------|-----------|---|
| 2 | On site | ROCK | Coal seam, inferred (BOTTOM SEAM OF GELLI GROUP) |
| 12 | On site | ROCK | Coal seam, inferred (BOTTOM SEAM OF GELLI GROUP OF COALS (CONJECTURAL)) |
| 13 | On site | ROCK | Coal seam, inferred (TOP SEAM OF GELLI GROUP OF COALS (CONJECTURAL)) |
| 14 | On site | ROCK | Coal seam, inferred (PEN) |
| 15 | On site | ROCK | Coal seam, inferred (PEN) |
| 17 | On site | ROCK | Coal seam, inferred (LOUGHOR LITTLE) |
| 18 | On site | FAULT | Normal fault, inferred |
| 19 | On site | FAULT | Normal fault, inferred |
| 21 | On site | FAULT | Normal fault, inferred |
| 22 | On site | FAULT | Normal fault, inferred |
| 23 | On site | FAULT | Normal fault, inferred |
| 24 | On site | FOLD_AXIS | Axial plane trace of major syncline |
| 25 | 20m S | FOLD_AXIS | Axial plane trace of major syncline |
| 26 | 62m E | FOLD_AXIS | Axial plane trace of major syncline |
| 27 | 100m SE | FAULT | Normal fault, inferred |
| 28 | 100m S | ROCK | Coal seam, inferred (SW 4 FT) |
| 29 | 117m W | FOLD_AXIS | Axial plane trace of major syncline |
| 31 | 193m NE | FAULT | Normal fault, inferred |
| 33 | 212m N | ROCK | Coal seam, inferred (TOP SEAM OF GELLI GROUP) |
| 34 | 232m SW | ROCK | Coal seam, inferred (PEN) |
| 37 | 294m SW | ROCK | Coal seam, inferred (SW 4 FT) |
| 38 | 373m S | ROCK | Coal seam, inferred (PEN) |
| 39 | 376m S | ROCK | Coal seam, inferred (PEN) |
| 40 | 427m S | ROCK | Coal seam, inferred (SW 4 FT) |
| 42 | 428m S | ROCK | Coal seam, inferred (SW 4 FT) |
| 46 | 478m N | FAULT | Normal fault, inferred |
| 48 | 484m NE | FAULT | Normal fault, inferred |

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

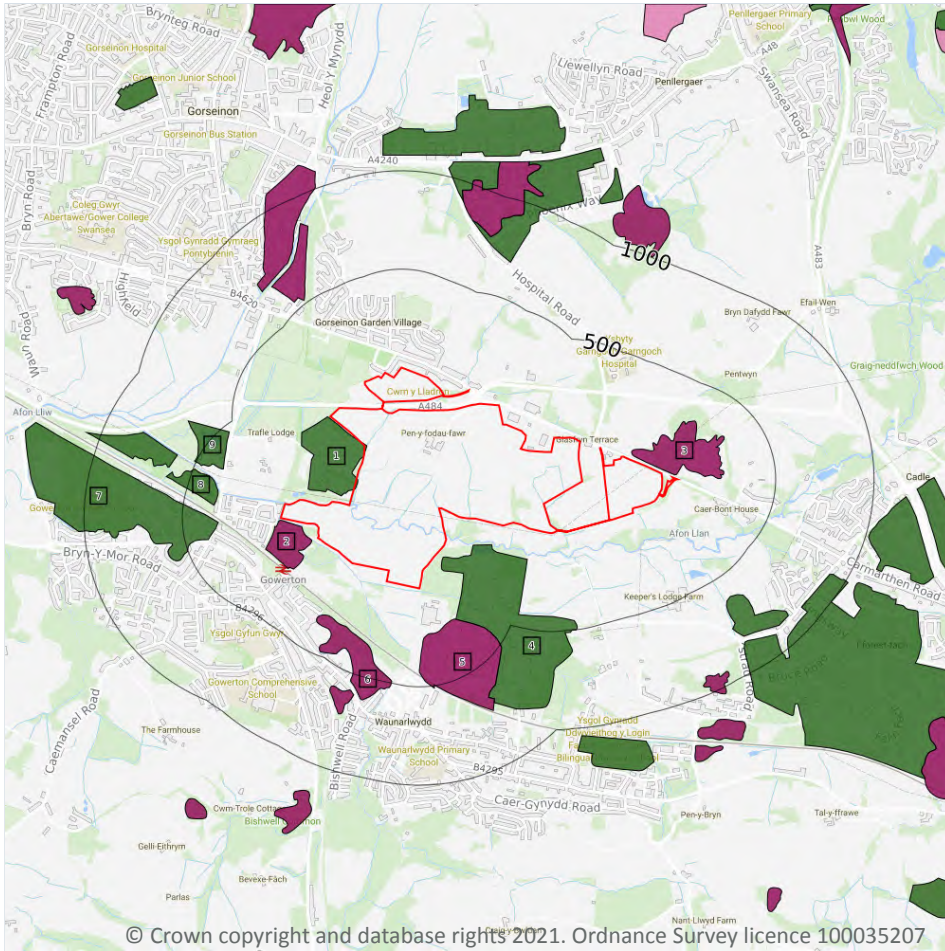
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 158**

| ID | Location | Artificial | Superficial | Bedrock | Mass movement | Sheet No. |
|----|----------|------------|-------------|---------|---------------|-----------------|
| 1 | On site | Full | Full | Full | Full | EW247_swanseav4 |

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground



15.2 Artificial and made ground (50k)

Records within 500m

9

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 159**

| ID | Location | LEX Code | Description | Rock description |
|----|----------|------------|-------------------------------|------------------------------|
| 1 | On site | LSGR-ARTGR | LANDSCAPED GROUND (UNDIVIDED) | ARTIFICIALLY MODIFIED GROUND |
| 2 | 11m S | MGR-ARTDP | MADE GROUND (UNDIVIDED) | ARTIFICIAL DEPOSIT |
| 3 | 16m N | MGR-ARTDP | MADE GROUND (UNDIVIDED) | ARTIFICIAL DEPOSIT |
| 4 | 36m SE | LSGR-ARTGR | LANDSCAPED GROUND (UNDIVIDED) | ARTIFICIALLY MODIFIED GROUND |



| ID | Location | LEX Code | Description | Rock description |
|----|----------|------------|-------------------------------|------------------------------|
| 5 | 226m SE | MGR-ARTDP | MADE GROUND (UNDIVIDED) | ARTIFICIAL DEPOSIT |
| 6 | 292m SW | MGR-ARTDP | MADE GROUND (UNDIVIDED) | ARTIFICIAL DEPOSIT |
| 7 | 318m W | LSGR-ARTGR | LANDSCAPED GROUND (UNDIVIDED) | ARTIFICIALLY MODIFIED GROUND |
| 8 | 340m W | LSGR-ARTGR | LANDSCAPED GROUND (UNDIVIDED) | ARTIFICIALLY MODIFIED GROUND |
| 9 | 360m NW | LSGR-ARTGR | LANDSCAPED GROUND (UNDIVIDED) | ARTIFICIALLY MODIFIED GROUND |

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

4

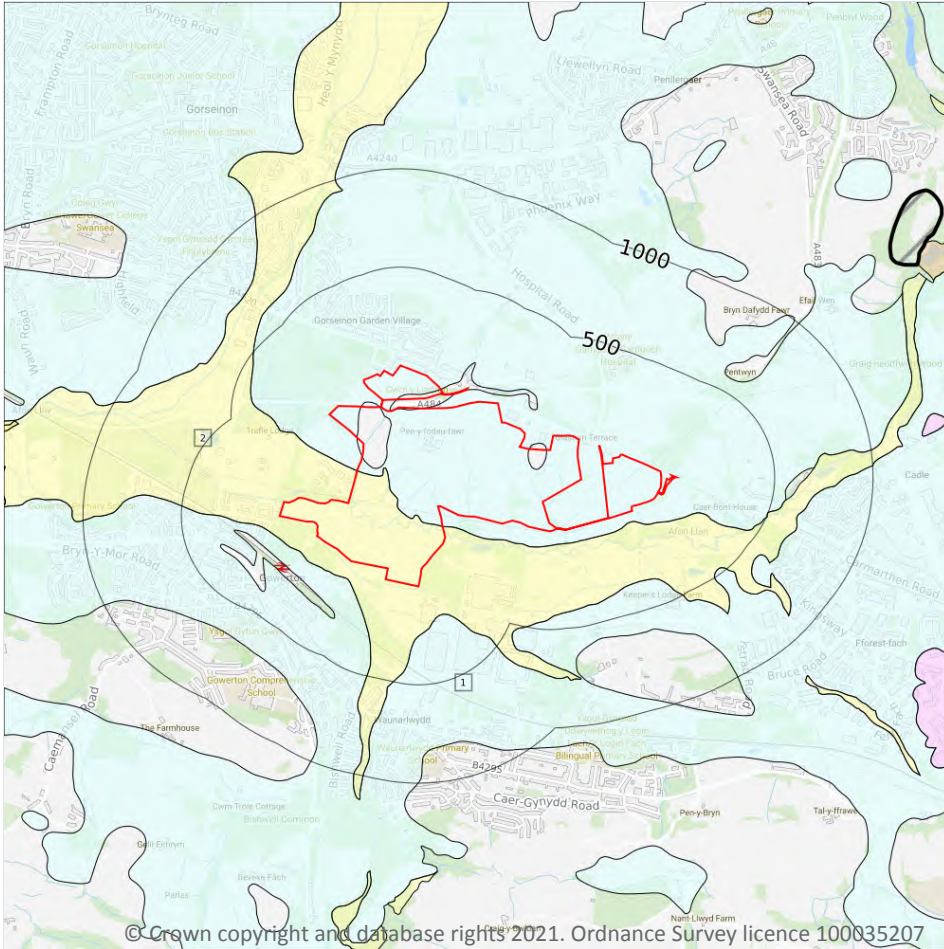
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------------|--------------|----------------------|----------------------|
| On site | Mixed | Very High | Low |
| 11m W | Mixed | Very High | Low |
| 16m E | Mixed | Very High | Low |
| 36m SE | Mixed | Very High | Low |

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (50k)
- Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

2

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 161**

| ID | Location | LEX Code | Description | Rock description |
|----|----------|------------|-----------------|-----------------------------|
| 1 | On site | TILLD-DMTN | TILL, DEVANSIAN | DIAMICTON |
| 2 | On site | ALV-XCZSV | ALLUVIUM | CLAY, SILT, SAND AND GRAVEL |

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m **4**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------|---------------|----------------------|----------------------|
| On site | Intergranular | High | Very Low |
| On site | Mixed | High | Low |
| On site | Intergranular | High | Very Low |
| On site | Mixed | High | Low |

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m **0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

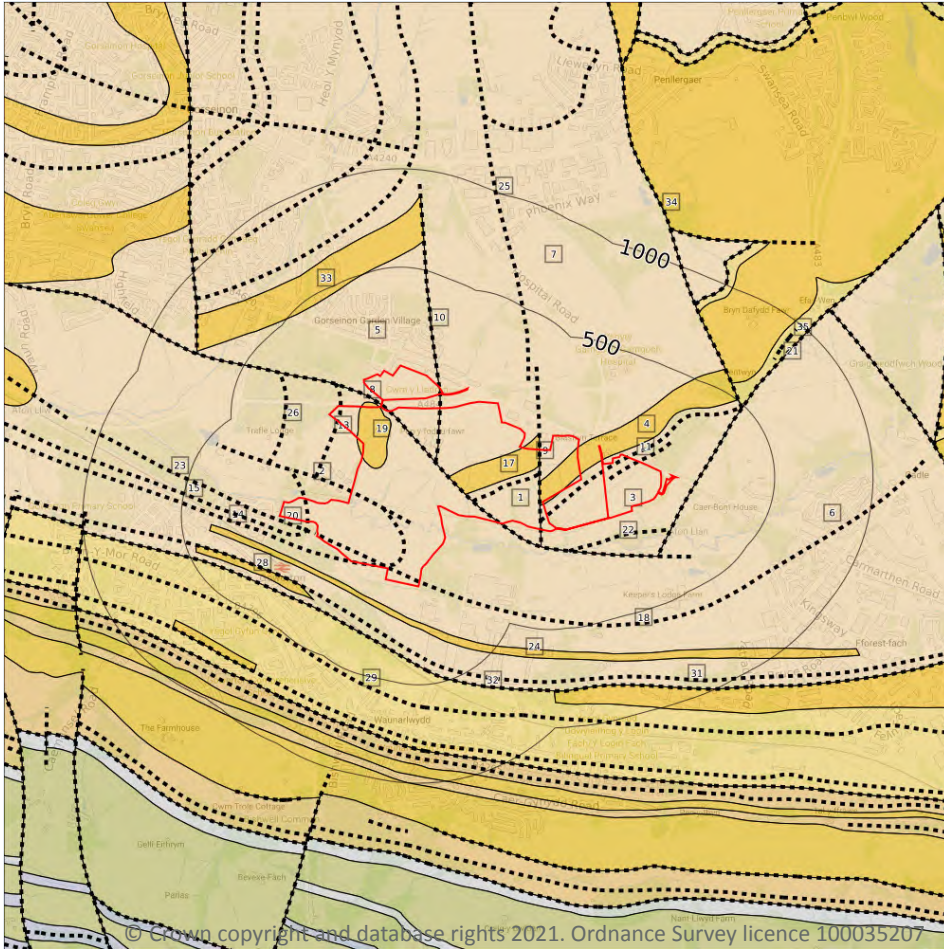
Records within 50m **0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (50k)
- Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

13

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 163**

| ID | Location | LEX Code | Description | Rock age |
|----|----------|----------|---|-------------|
| 1 | On site | GDB-MDSS | GROVESEND FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 3 | On site | GDB-MDSS | GROVESEND FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 4 | On site | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |



| ID | Location | LEX Code | Description | Rock age |
|----|----------|----------|---|-------------|
| 5 | On site | GDB-MDSS | GROVESEND FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 6 | On site | GDB-MDSS | GROVESEND FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 7 | On site | GDB-MDSS | GROVESEND FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 17 | On site | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |
| 19 | On site | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |
| 24 | 118m SW | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |
| 28 | 253m SW | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |
| 29 | 294m SW | SW-MDSS | SWANSEA MEMBER - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 33 | 456m NW | GDB-SDST | GROVESEND FORMATION - SANDSTONE | WESTPHALIAN |
| 35 | 484m NE | SW-MDSS | SWANSEA MEMBER - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

5

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------|-----------|----------------------|----------------------|
| On site | Fracture | High | Moderate |
| On site | Fracture | High | Moderate |
| On site | Fracture | High | Moderate |
| On site | Fracture | Moderate | Low |
| On site | Fracture | Moderate | Low |

This data is sourced from the British Geological Survey.



15.10 Bedrock faults and other linear features (50k)

Records within 500m

22

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

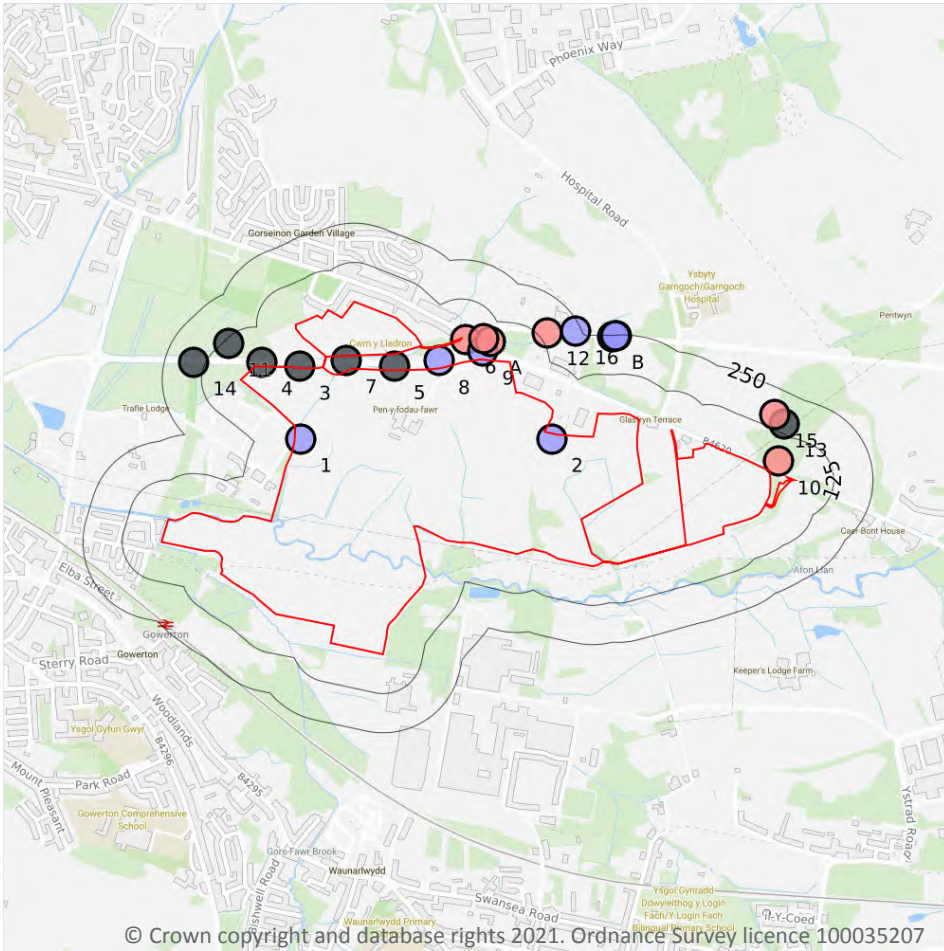
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 163**

| ID | Location | Category | Description |
|----|----------|-----------|---------------------------------------|
| 2 | On site | FAULT | Fault, inferred, displacement unknown |
| 8 | On site | FAULT | Fault, inferred, displacement unknown |
| 9 | On site | FAULT | Fault, inferred, displacement unknown |
| 10 | On site | FAULT | Fault, inferred, displacement unknown |
| 11 | On site | ROCK | Coal seam, inferred |
| 12 | On site | ROCK | Coal seam, inferred |
| 13 | On site | ROCK | Coal seam, inferred |
| 14 | On site | ROCK | Coal seam, inferred |
| 15 | On site | ROCK | Coal seam, inferred |
| 16 | On site | ROCK | Coal seam, inferred |
| 18 | On site | FOLD_AXIS | Axial plane trace of major syncline |
| 20 | 20m S | FOLD_AXIS | Axial plane trace of major syncline |
| 21 | 100m SE | FAULT | Fault, inferred, displacement unknown |
| 22 | 100m S | ROCK | Coal seam, inferred |
| 23 | 117m W | FOLD_AXIS | Axial plane trace of major syncline |
| 25 | 193m NE | FAULT | Fault, inferred, displacement unknown |
| 26 | 212m N | ROCK | Coal seam, inferred |
| 27 | 232m SW | ROCK | Coal seam, inferred |
| 30 | 294m SW | ROCK | Coal seam, inferred |
| 31 | 373m S | ROCK | Coal seam, inferred |
| 32 | 428m S | ROCK | Coal seam, inferred |
| 34 | 484m NE | FAULT | Fault, inferred, displacement unknown |

This data is sourced from the British Geological Survey.



16 Boreholes



16.1 BGS Boreholes

Records within 250m

21

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 166**

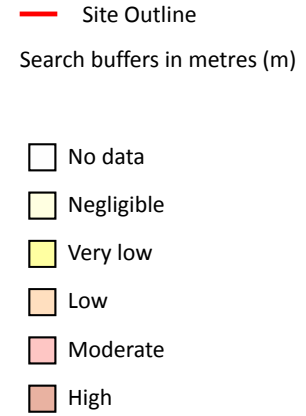
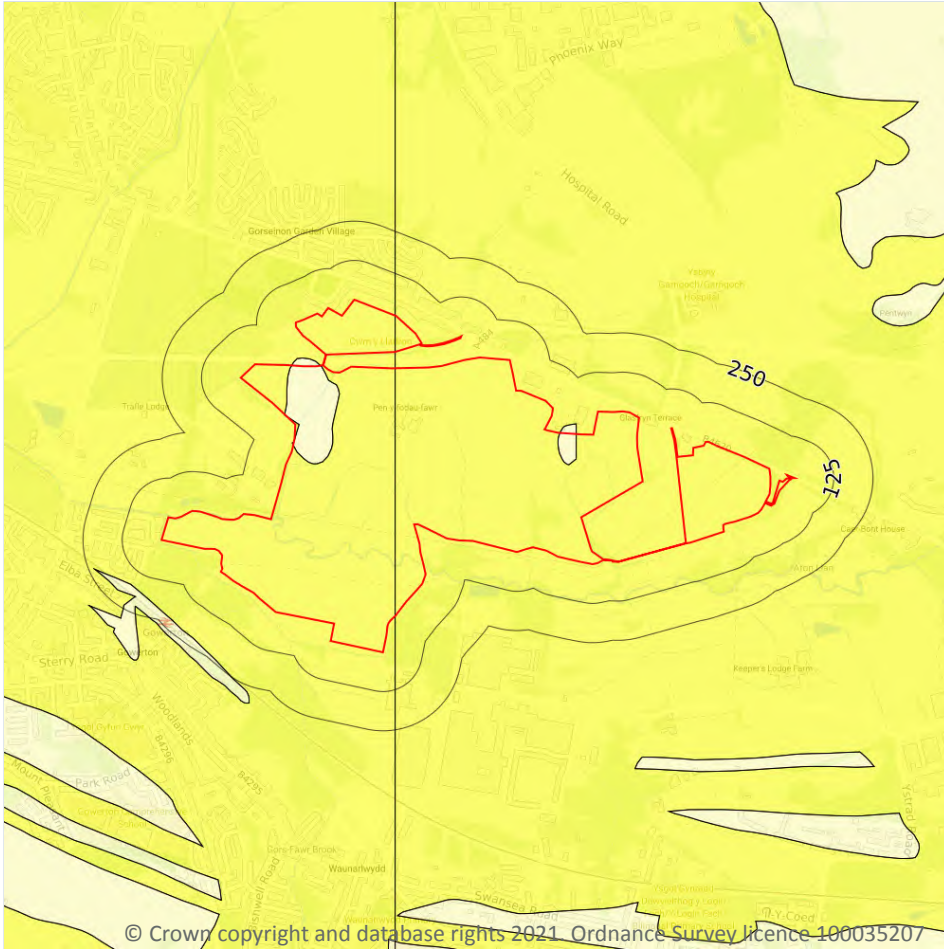
| ID | Location | Grid reference | Name | Length | Confidential | Web link |
|----|----------|----------------|------------------------|--------|--------------|------------------------|
| 1 | On site | 259700 197000 | OAK LANDS O/C SITE 272 | -2.0 | N | 367912 |
| 2 | On site | 260500 197000 | CAPE COLLIERY. 271 | -2.0 | N | 369399 |

| ID | Location | Grid reference | Name | Length | Confidential | Web link |
|----|----------|----------------|--------------------------------|--------|--------------|------------------------|
| 3 | 5m N | 259697 197232 | LLANELLI LINK ROAD 39 | - | Y | N/A |
| 4 | 12m N | 259576 197244 | LLANELLI LINK ROAD TP 4 | - | Y | N/A |
| 5 | 14m N | 259998 197234 | LLANELLI LINK ROAD TP 5 | - | Y | N/A |
| 6 | 15m SE | 260224 197316 | LLANELLI LINK ROAD 43 | 40.0 | N | 369723 |
| 7 | 15m S | 259844 197251 | LLANELLI LINK ROAD 40 | - | Y | N/A |
| 8 | 24m N | 260140 197250 | LLANELLI LINK ROAD 41 | 3.6 | N | 369721 |
| 9 | 27m N | 260280 197280 | LLANELLI LINK ROAD 42 | 4.5 | N | 369722 |
| 10 | 41m NE | 261220 196930 | GARN GOCH COLLIERY, NO.1 SHAFT | 283.77 | N | 369528 |
| A | 59m N | 260302 197311 | LLANELLI LINK ROAD 44 | 37.0 | N | 369724 |
| A | 67m N | 260283 197320 | LLANELLI LINK ROAD 44A | 35.0 | N | 369725 |
| 11 | 110m NW | 259470 197304 | LLANELLI LINK ROAD 38 | - | Y | N/A |
| 12 | 152m NE | 260484 197340 | LLANELLI LINK ROAD 45 | 39.7 | N | 369726 |
| 13 | 156m NE | 261240 197050 | LLANELLI-SWANSEA LINE. 17/2 | - | Y | N/A |
| 14 | 159m W | 259359 197244 | LLANELLI LINK ROAD 37 | - | Y | N/A |
| 15 | 171m NE | 261210 197080 | GARN GOCH COLLIERY, NO.4 SHAFT | 34.44 | N | 369527 |
| 16 | 232m NE | 260575 197345 | LLANELLI LINK ROAD 46 | 5.0 | N | 369727 |
| B | 247m N | 260692 197328 | LLANELLI LINK ROAD 47 | 7.05 | N | 369728 |
| B | 249m N | 260706 197331 | LLANELLI LINK ROAD 47A | 2.6 | N | 369729 |
| B | 249m N | 260703 197331 | LLANELLI LINK ROAD 47AB | 7.5 | N | 369730 |

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

2

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

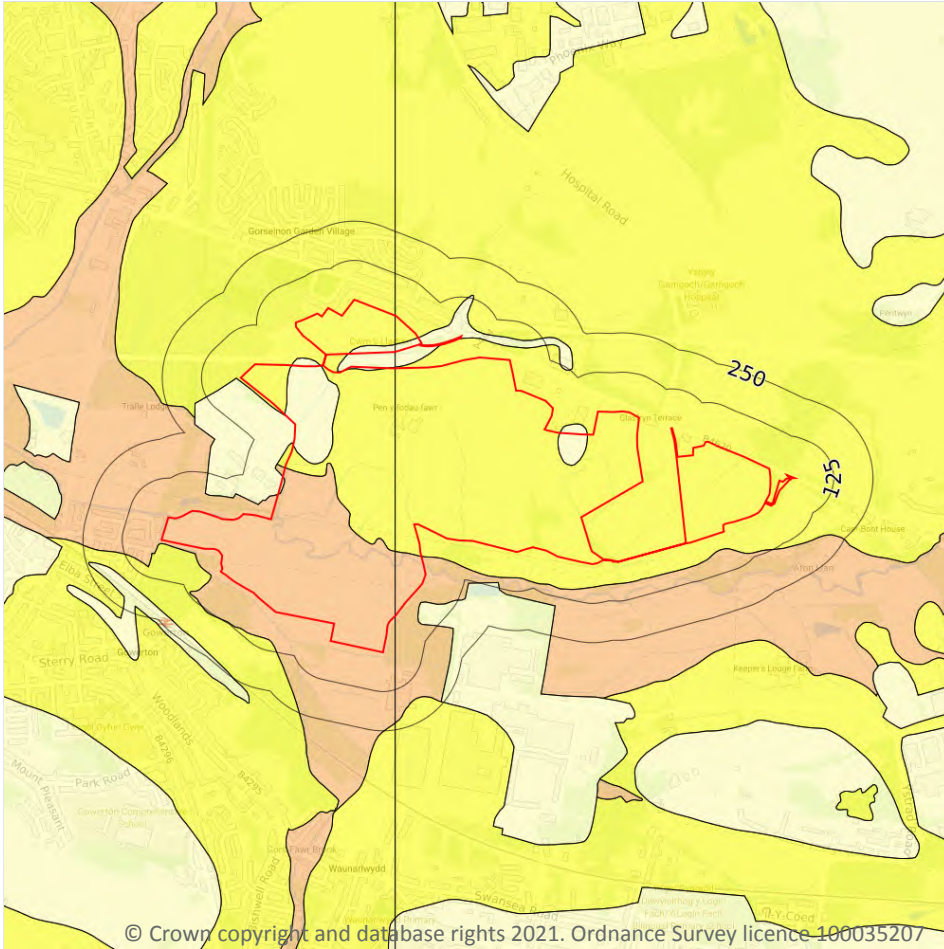
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 168**

| Location | Hazard rating | Details |
|----------|---------------|---|
| On site | Negligible | Ground conditions predominantly non-plastic. |
| On site | Very low | Ground conditions predominantly low plasticity. |

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



— Site Outline
Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m

5

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 169**

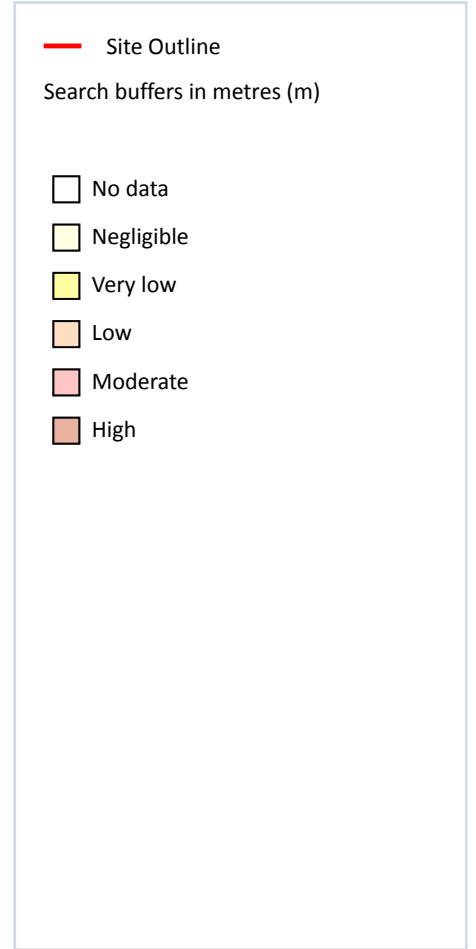
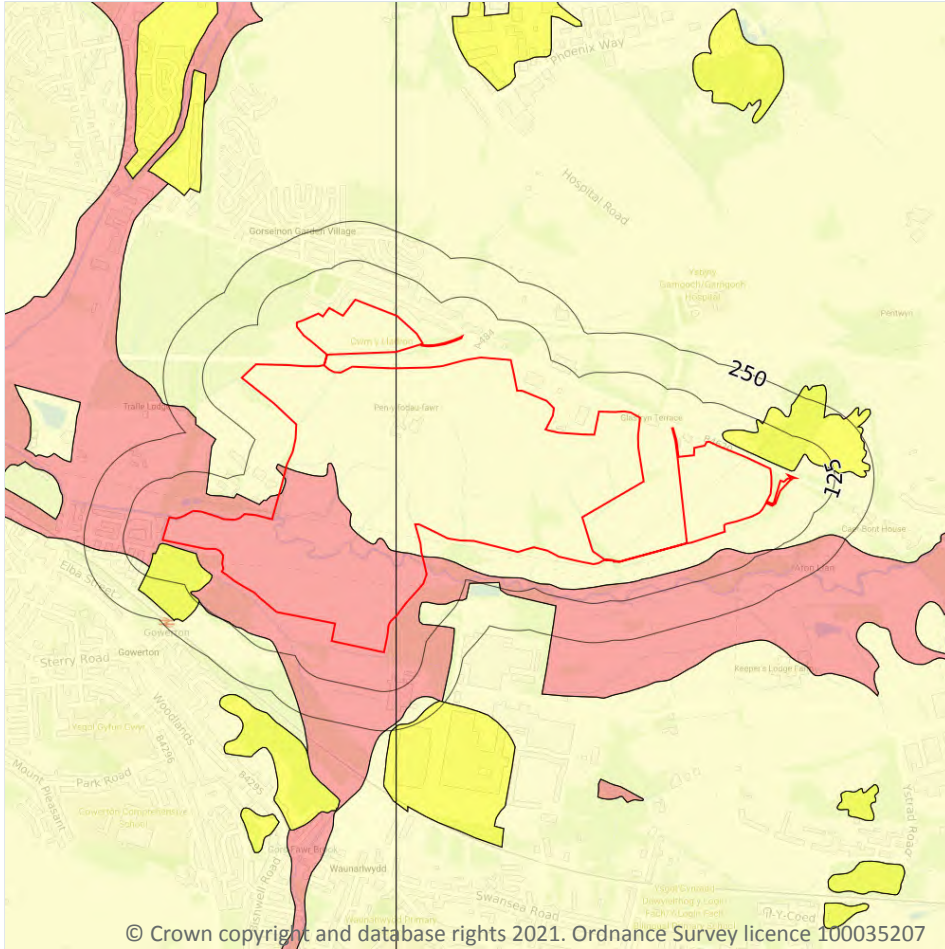
| Location | Hazard rating | Details |
|----------|---------------|--|
| On site | Negligible | Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions. |

| Location | Hazard rating | Details |
|----------|---------------|--|
| On site | Very low | Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly. |
| On site | Low | Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water. |
| 11m S | Very low | Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly. |
| 36m SE | Negligible | Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions. |

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

4

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 171**

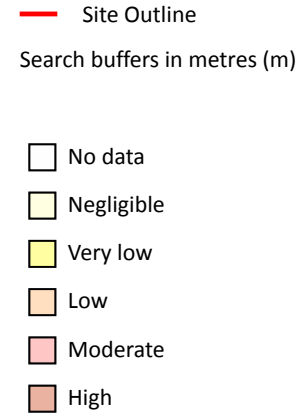
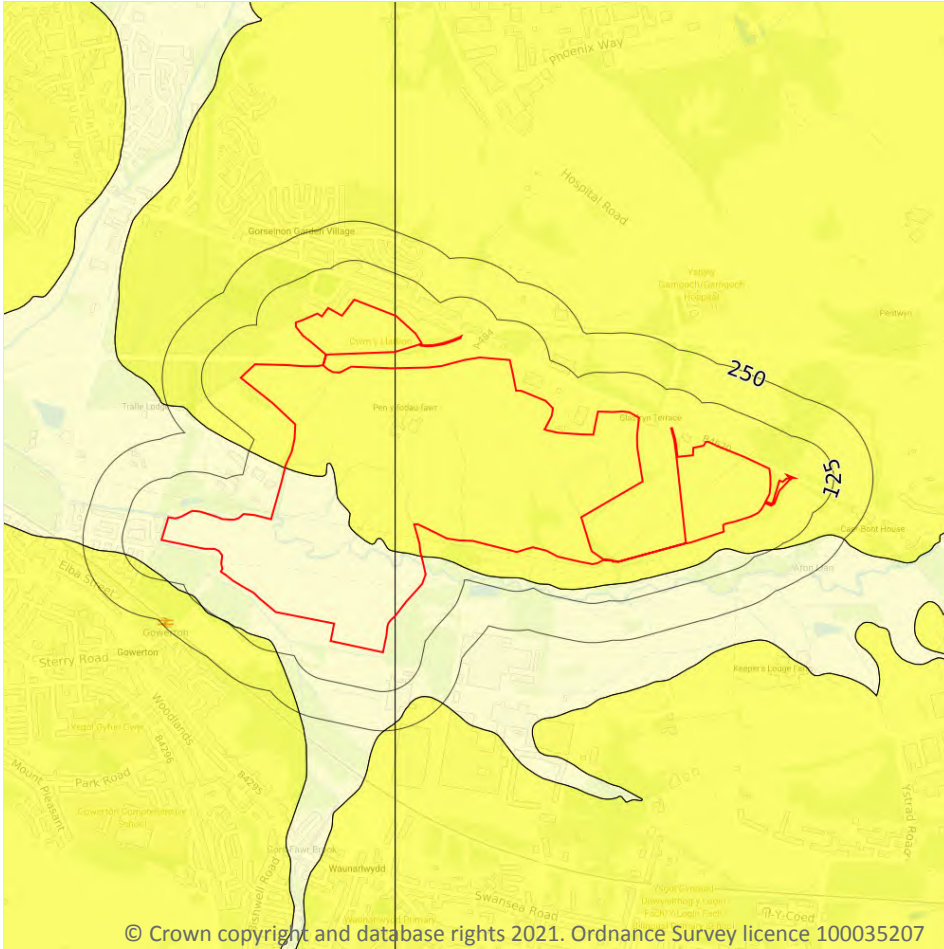
| Location | Hazard rating | Details |
|----------|---------------|--|
| On site | Negligible | Compressible strata are not thought to occur. |
| On site | Moderate | Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site. |

| Location | Hazard rating | Details |
|----------|---------------|---|
| 11m S | Very low | Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses. |
| 16m N | Very low | Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses. |

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

2

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

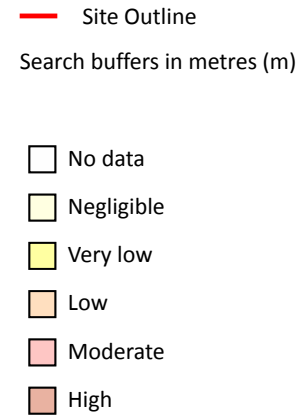
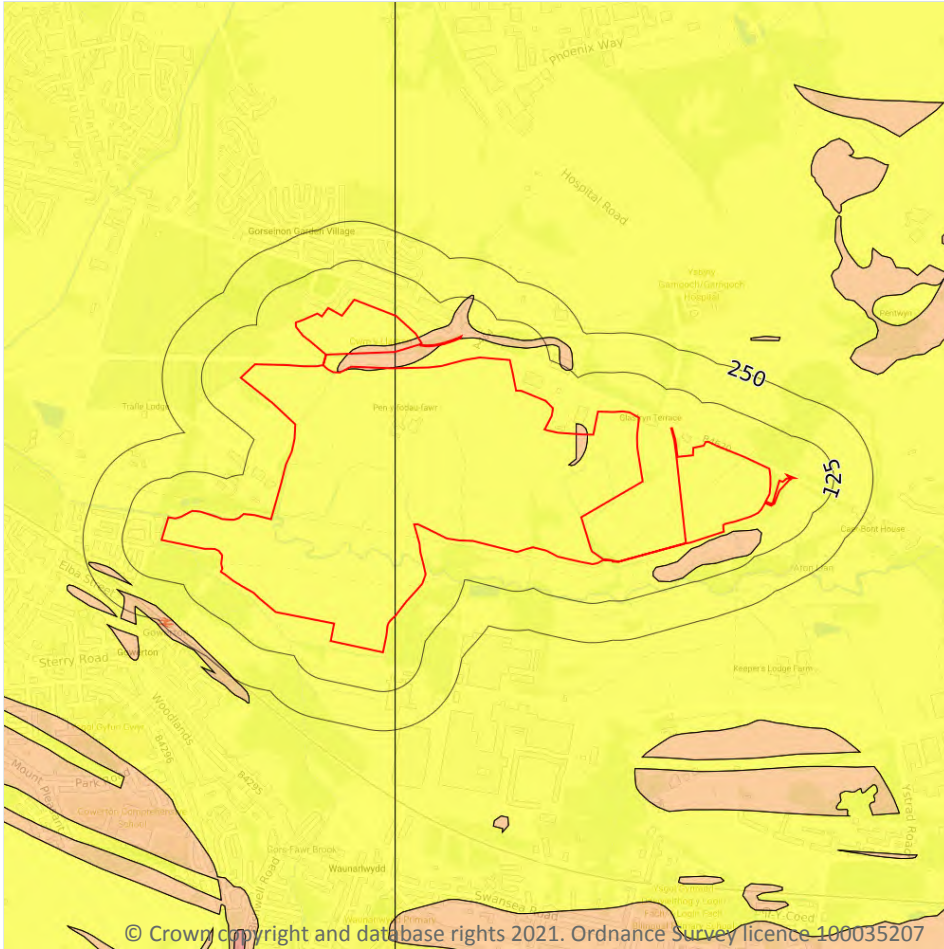
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 173**

| Location | Hazard rating | Details |
|----------|---------------|---|
| On site | Negligible | Deposits with potential to collapse when loaded and saturated are believed not to be present. |
| On site | Very low | Deposits with potential to collapse when loaded and saturated are unlikely to be present. |

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

3

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 174**

| Location | Hazard rating | Details |
|----------|---------------|---|
| On site | Very low | Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered. |

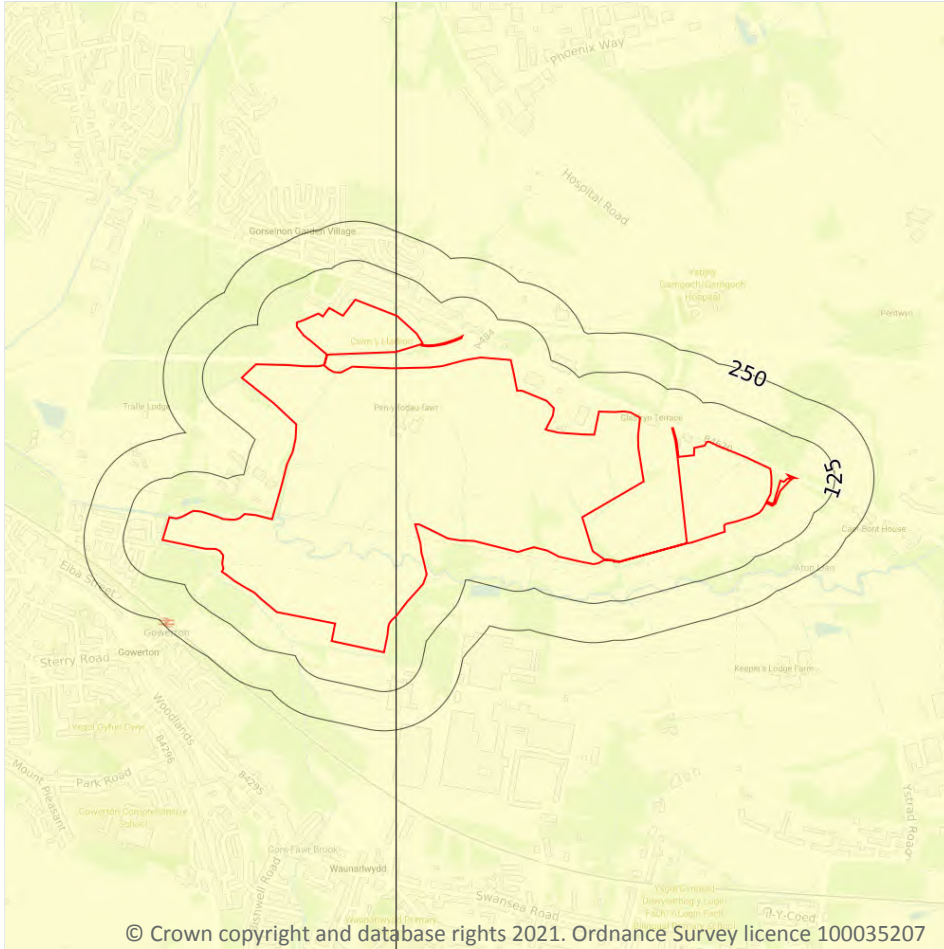


| Location | Hazard rating | Details |
|----------|---------------|---|
| On site | Low | Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site. |
| 10m S | Low | Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site. |

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

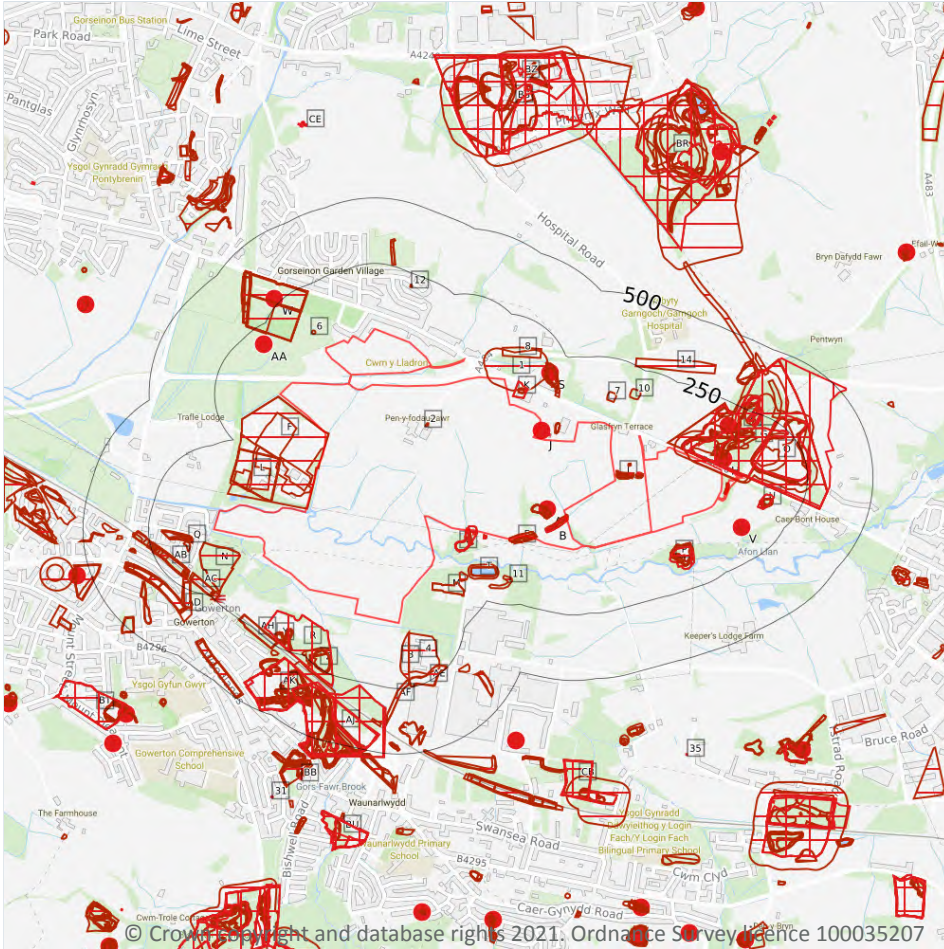
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 176**

| Location | Hazard rating | Details |
|----------|---------------|---|
| On site | Negligible | Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present. |

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

10

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 178**

| ID | Location | Details | Description |
|----|----------|---|--|
| A | On site | Name: Cape Colliery Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| B | On site | Name: Cape Colliery Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| J | 15m SE | Name: Pen-y-fadau-fawr Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| H | 42m NE | Name: Garngoch No.1 Address: Penllergaer, GORSEINON, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |



| ID | Location | Details | Description |
|----|----------|--|--|
| H | 45m NE | Name: Garngoch No.1 Address: Penllergaer, GORSEINON, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| V | 122m SE | Name: Gwalia Colliery Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| H | 163m NE | Name: Garn-goch Colliery Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| S | 167m N | Name: Pen-y-waun Address: Gorseinon, SWANSEA, West Glamorgan Commodity: Sandstone Status: Ceased | Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| AA | 181m NW | Name: Stafford Common Address: Gorseinon, LLANELLI, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |



| ID | Location | Details | Description |
|----|----------|--|--|
| W | 271m NW | Name: Stafford Common Address: Gorseinon, LLANELLI, West Glamorgan Commodity: Coal, Deep Status: Ceased | Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

| | |
|----------------------------|------------|
| Records within 250m | 240 |
|----------------------------|------------|

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 178**

| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|------------------|-----------------|---------------|
| 1 | On site | Disused Colliery | 1878 | 1:10560 |
| 2 | On site | Pond | 1897 | 1:10560 |
| A | On site | Unspecified Heap | 1947 | 1:10560 |
| A | On site | Unspecified Heap | 1980 | 1:10000 |
| A | On site | Unspecified Heap | 1968 | 1:10560 |
| A | On site | Unspecified Heap | 1938 | 1:10560 |
| A | On site | Unspecified Heap | 1938 | 1:10560 |
| A | On site | Unspecified Heap | 1994 | 1:10000 |
| A | On site | Unspecified Heap | 1964 | 1:10560 |
| A | On site | Unspecified Heap | 1936 | 1:10560 |
| B | On site | Old Coal Pit | 1913 | 1:10560 |
| B | On site | Unspecified Pit | 1897 | 1:10560 |
| B | On site | Unspecified Pits | 1938 | 1:10560 |
| B | On site | Unspecified Pits | 1938 | 1:10560 |
| B | On site | Unspecified Pits | 1936 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| C | On site | Unspecified Heap | 1947 | 1:10560 |
| C | On site | Unspecified Heap | 1980 | 1:10000 |
| C | On site | Unspecified Disused Drift | 1968 | 1:10560 |
| C | On site | Unspecified Heap | 1994 | 1:10000 |
| C | On site | Unspecified Disused Drift | 1964 | 1:10560 |
| C | On site | Unspecified Heap | 1936 | 1:10560 |
| D | On site | Refuse Heap | 1947 | 1:10560 |
| D | On site | Refuse Heap | 1938 | 1:10560 |
| D | On site | Refuse Heap | 1938 | 1:10560 |
| D | On site | Refuse Heap | 1936 | 1:10560 |
| E | On site | Unspecified Ground Workings | 1947 | 1:10560 |
| E | On site | Unspecified Ground Workings | 1897 | 1:10560 |
| E | On site | Unspecified Heap | 1913 | 1:10560 |
| E | On site | Unspecified Heap | 1938 | 1:10560 |
| E | On site | Unspecified Heap | 1938 | 1:10560 |
| E | On site | Cuttings | 1878 | 1:10560 |
| E | On site | Unspecified Heap | 1936 | 1:10560 |
| F | On site | Sewage Works | 1992 | 1:10000 |
| F | On site | Sewage Works | 1988 | 1:10000 |
| G | On site | Colliery | 1947 | 1:10560 |
| H | On site | Colliery | 1913 | 1:10560 |
| C | 7m S | Unspecified Old Drift | 1938 | 1:10560 |
| C | 7m S | Unspecified Old Drift | 1938 | 1:10560 |
| I | 7m E | Unspecified Heap | 1964 | 1:10560 |
| C | 8m S | Unspecified Old Drift | 1936 | 1:10560 |
| C | 8m S | Unspecified Old Drift | 1947 | 1:10560 |
| I | 8m E | Unspecified Ground Workings | 1947 | 1:10560 |
| I | 8m W | Unspecified Heap | 1938 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| I | 8m W | Unspecified Heap | 1938 | 1:10560 |
| I | 9m W | Unspecified Heap | 1936 | 1:10560 |
| H | 9m N | Unspecified Ground Workings | 1913 | 1:10560 |
| I | 9m E | Unspecified Ground Workings | 1913 | 1:10560 |
| G | 9m N | Colliery | 1936 | 1:10560 |
| I | 9m W | Unspecified Heap | 1947 | 1:10560 |
| G | 9m N | Colliery | 1938 | 1:10560 |
| G | 9m N | Colliery | 1938 | 1:10560 |
| C | 10m S | Unspecified Disused Drift | 1980 | 1:10000 |
| C | 10m S | Unspecified Disused Drift | 1994 | 1:10000 |
| I | 10m E | Unspecified Heap | 1980 | 1:10000 |
| I | 10m E | Unspecified Heap | 1968 | 1:10560 |
| I | 10m E | Unspecified Heap | 1994 | 1:10000 |
| I | 10m W | Unspecified Heap | 1964 | 1:10560 |
| I | 10m E | Unspecified Ground Workings | 1897 | 1:10560 |
| I | 10m W | Unspecified Heap | 1968 | 1:10560 |
| I | 11m E | Unspecified Ground Workings | 1938 | 1:10560 |
| I | 11m E | Unspecified Ground Workings | 1938 | 1:10560 |
| H | 11m NE | Unspecified Ground Workings | 1947 | 1:10560 |
| I | 11m E | Unspecified Heap | 1936 | 1:10560 |
| H | 12m NE | Unspecified Heaps | 1938 | 1:10560 |
| H | 12m NE | Unspecified Heaps | 1938 | 1:10560 |
| H | 12m N | Unspecified Heaps | 1936 | 1:10560 |
| H | 13m N | Colliery | 1897 | 1:10560 |
| F | 14m W | Sewage Works | 1974 | 1:10000 |
| K | 19m E | Colliery | 1913 | 1:10560 |
| J | 28m N | Unspecified Heap | 1947 | 1:10560 |
| J | 28m N | Unspecified Heap | 1936 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| J | 30m N | Unspecified Heap | 1913 | 1:10560 |
| C | 30m S | Unspecified Heap | 1938 | 1:10560 |
| C | 30m S | Unspecified Heap | 1938 | 1:10560 |
| J | 31m N | Unspecified Heap | 1938 | 1:10560 |
| J | 31m N | Unspecified Heap | 1938 | 1:10560 |
| H | 33m N | Unspecified Heap | 1897 | 1:10560 |
| H | 38m N | Unspecified Ground Workings | 1980 | 1:10000 |
| H | 38m N | Unspecified Ground Workings | 1968 | 1:10560 |
| H | 38m N | Unspecified Ground Workings | 1994 | 1:10000 |
| L | 42m N | Sewage Works | 1948 | 1:10560 |
| L | 42m N | Sewage Works | 1938 | 1:10560 |
| L | 42m N | Sewage Works | 1938 | 1:10560 |
| K | 42m E | Refuse Heap | 1947 | 1:10560 |
| K | 43m E | Gravel Pit | 1938 | 1:10560 |
| L | 44m N | Corporation Sewage Works | 1936 | 1:10560 |
| M | 47m SE | Sludge Beds | 1980 | 1:10000 |
| M | 47m SE | Sludge Beds | 1994 | 1:10000 |
| H | 49m NE | Cuttings | 1936 | 1:10560 |
| I | 50m W | Pond | 1897 | 1:10560 |
| H | 52m NE | Cuttings | 1968 | 1:10560 |
| H | 52m NE | Unspecified Pit | 1980 | 1:10000 |
| H | 52m NE | Unspecified Pit | 1994 | 1:10000 |
| 3 | 53m SE | Refuse Heap | 1992 | 1:10000 |
| 4 | 54m SE | Refuse Heap | 1994 | 1:10000 |
| N | 60m S | Unspecified Disused Tip | 1992 | 1:10000 |
| N | 60m S | Unspecified Disused Tip | 1988 | 1:10000 |
| H | 60m NE | Cuttings | 1964 | 1:10560 |
| 5 | 60m N | Sewage Works | 1967 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| O | 62m NE | Refuse Heap | 1947 | 1:10560 |
| O | 62m NE | Refuse Heap | 1936 | 1:10560 |
| H | 65m NE | Refuse Heap | 1938 | 1:10560 |
| H | 65m NE | Refuse Heap | 1938 | 1:10560 |
| O | 67m NE | Unspecified Heaps | 1964 | 1:10560 |
| O | 68m NE | Refuse Heap | 1938 | 1:10560 |
| O | 68m NE | Refuse Heap | 1938 | 1:10560 |
| 6 | 70m NW | Unspecified Pit | 1878 | 1:10560 |
| P | 73m S | Unspecified Ground Workings | 1897 | 1:10560 |
| H | 74m NE | Cuttings | 1938 | 1:10560 |
| P | 75m S | Unspecified Heap | 1980 | 1:10000 |
| P | 75m S | Unspecified Heap | 1994 | 1:10000 |
| P | 78m S | Unspecified Heap | 1964 | 1:10560 |
| P | 79m S | Unspecified Heap | 1913 | 1:10560 |
| G | 80m NE | Unspecified Ground Workings | 1913 | 1:10560 |
| P | 81m S | Unspecified Heap | 1947 | 1:10560 |
| P | 81m S | Unspecified Heap | 1936 | 1:10560 |
| P | 83m S | Unspecified Heap | 1938 | 1:10560 |
| P | 83m S | Unspecified Heap | 1938 | 1:10560 |
| H | 84m NE | Unspecified Heap | 1897 | 1:10560 |
| 7 | 87m N | Unspecified Ground Workings | 1913 | 1:10560 |
| P | 88m S | Disused Colliery | 1878 | 1:10560 |
| 8 | 89m N | Cuttings | 1994 | 1:10000 |
| Q | 90m SW | Unspecified Heap | 1974 | 1:10000 |
| Q | 92m W | Unspecified Ground Workings | 1936 | 1:10560 |
| Q | 94m W | Unspecified Heap | 1948 | 1:10560 |
| Q | 94m W | Unspecified Heap | 1938 | 1:10560 |
| Q | 94m W | Unspecified Heap | 1938 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| R | 102m S | Colliery | 1913 | 1:10560 |
| S | 105m NE | Unspecified Heap | 1878 | 1:10560 |
| Q | 107m SW | Unspecified Heap | 1913 | 1:10560 |
| T | 109m S | Pond | 1968 | 1:10560 |
| U | 110m SE | Colliery | 1913 | 1:10560 |
| 9 | 110m E | Refuse Heap | 1980 | 1:10000 |
| H | 111m NE | Pond | 1938 | 1:10560 |
| U | 113m SE | Unspecified Heap | 1913 | 1:10560 |
| U | 113m SE | Unspecified Heap | 1947 | 1:10560 |
| U | 113m SE | Unspecified Heap | 1936 | 1:10560 |
| U | 114m SE | Unspecified Heap | 1980 | 1:10000 |
| U | 114m SE | Unspecified Heap | 1968 | 1:10560 |
| U | 114m SE | Unspecified Heap | 1994 | 1:10000 |
| S | 114m NE | Unspecified Quarry | 1897 | 1:10560 |
| U | 114m SE | Unspecified Heap | 1938 | 1:10560 |
| U | 114m SE | Unspecified Heap | 1938 | 1:10560 |
| Q | 116m W | Unspecified Ground Workings | 1913 | 1:10560 |
| U | 116m SE | Unspecified Heap | 1964 | 1:10560 |
| T | 117m S | Reservoir | 1980 | 1:10000 |
| T | 117m S | Reservoir | 1994 | 1:10000 |
| T | 119m S | Pond | 1964 | 1:10560 |
| S | 121m NE | Unspecified Quarry | 1913 | 1:10560 |
| H | 122m NE | Unspecified Pit | 1980 | 1:10000 |
| H | 122m NE | Unspecified Pit | 1968 | 1:10560 |
| H | 122m NE | Unspecified Pit | 1994 | 1:10000 |
| H | 126m NE | Pond | 1897 | 1:10560 |
| V | 127m SE | Old Coal Pit | 1913 | 1:10560 |
| V | 128m SE | Unspecified Old Pit | 1947 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| S | 128m NE | Pond | 1936 | 1:10560 |
| S | 128m NE | Pond | 1947 | 1:10560 |
| V | 128m SE | Unspecified Old Pit | 1936 | 1:10560 |
| V | 129m SE | Unspecified Old Pit | 1938 | 1:10560 |
| V | 129m SE | Unspecified Old Pit | 1938 | 1:10560 |
| S | 132m NE | Pond | 1938 | 1:10560 |
| 10 | 135m NE | Unspecified Ground Workings | 1913 | 1:10560 |
| W | 136m W | Cemetery | 1992 | 1:10000 |
| W | 136m W | Cemetery | 1988 | 1:10000 |
| W | 136m W | Cemetery | 1974 | 1:10000 |
| W | 138m W | Cemetery | 1967 | 1:10560 |
| X | 139m NE | Refuse Heaps | 1936 | 1:10560 |
| 11 | 140m S | Gravel Pit | 1968 | 1:10560 |
| X | 143m NE | Refuse Heaps | 1938 | 1:10560 |
| X | 143m NE | Refuse Heaps | 1938 | 1:10560 |
| H | 155m NE | Refuse Heap | 1936 | 1:10560 |
| H | 156m NE | Refuse Heap | 1938 | 1:10560 |
| H | 156m NE | Refuse Heap | 1938 | 1:10560 |
| Y | 166m SW | Unspecified Heap | 1948 | 1:10560 |
| Y | 166m SW | Unspecified Heap | 1913 | 1:10560 |
| W | 166m NW | Cemetery | 1964 | 1:10560 |
| W | 168m NW | Cemetery | 1936 | 1:10560 |
| Z | 168m SW | Unspecified Slant | 1913 | 1:10560 |
| W | 170m NW | Cemetery | 1938 | 1:10560 |
| Y | 171m SW | Unspecified Heap | 1992 | 1:10000 |
| Y | 171m SW | Unspecified Heap | 1988 | 1:10000 |
| Y | 171m SW | Unspecified Heap | 1974 | 1:10000 |
| Y | 172m SW | Unspecified Heap | 1936 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| W | 172m NW | Cemetery | 1948 | 1:10560 |
| W | 172m NW | Burial Ground | 1913 | 1:10560 |
| Y | 173m SW | Unspecified Heap | 1964 | 1:10560 |
| Y | 173m SW | Unspecified Heap | 1967 | 1:10560 |
| Y | 174m SW | Unspecified Heap | 1938 | 1:10560 |
| Y | 174m SW | Unspecified Heap | 1938 | 1:10560 |
| H | 177m NE | Drift | 1936 | 1:10560 |
| H | 177m NE | Drift | 1947 | 1:10560 |
| H | 178m NE | Unspecified Drift | 1938 | 1:10560 |
| AA | 178m NW | Old Coal Pit | 1905 | 1:10560 |
| AA | 179m NW | Old Coal Pit | 1900 | 1:10560 |
| H | 181m NE | Pond | 1968 | 1:10560 |
| AB | 181m SW | Cuttings | 1913 | 1:10560 |
| AB | 181m SW | Cuttings | 1992 | 1:10000 |
| AB | 181m SW | Cuttings | 1988 | 1:10000 |
| AB | 181m SW | Cuttings | 1974 | 1:10000 |
| AB | 182m SW | Cuttings | 1889 | 1:10560 |
| H | 182m NE | Pond | 1964 | 1:10560 |
| H | 182m NE | Pond | 1936 | 1:10560 |
| Z | 183m SW | Unspecified Heap | 1948 | 1:10560 |
| AB | 183m SW | Cuttings | 1938 | 1:10560 |
| AB | 183m SW | Cuttings | 1878 | 1:10560 |
| AB | 183m SW | Cuttings | 1948 | 1:10560 |
| Z | 183m SW | Unspecified Ground Workings | 1988 | 1:10000 |
| Z | 183m SW | Unspecified Ground Workings | 1974 | 1:10000 |
| AB | 183m SW | Cuttings | 1878 | 1:10560 |
| Z | 184m SW | Unspecified Heap | 1936 | 1:10560 |
| AC | 184m SW | Cuttings | 1913 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| Z | 185m SW | Unspecified Heap | 1938 | 1:10560 |
| Z | 185m SW | Unspecified Heap | 1938 | 1:10560 |
| AB | 185m SW | Cuttings | 1964 | 1:10560 |
| AB | 185m SW | Cuttings | 1967 | 1:10560 |
| AC | 187m SW | Cuttings | 1948 | 1:10560 |
| Z | 187m SW | Unspecified Heap | 1992 | 1:10000 |
| AC | 187m SW | Cuttings | 1938 | 1:10560 |
| G | 188m NE | Unspecified Heap | 1897 | 1:10560 |
| 12 | 198m N | Pond | 1897 | 1:10560 |
| X | 201m N | Unspecified Heap | 1964 | 1:10560 |
| X | 202m N | Unspecified Disused Drift | 1980 | 1:10000 |
| X | 202m N | Unspecified Ground Workings | 1968 | 1:10560 |
| X | 202m N | Unspecified Disused Drift | 1994 | 1:10000 |
| AB | 208m SW | Cuttings | 1948 | 1:10560 |
| AD | 213m SW | Cuttings | 1936 | 1:10560 |
| AE | 214m S | Gravel Pit | 1968 | 1:10560 |
| AE | 215m S | Refuse Heap | 1964 | 1:10560 |
| AF | 216m S | Refuse Heap | 1988 | 1:10000 |
| AF | 216m S | Refuse Heap | 1974 | 1:10000 |
| AG | 222m SW | Cuttings | 1948 | 1:10560 |
| AG | 222m SW | Cuttings | 1913 | 1:10560 |
| AG | 223m SW | Cuttings | 1938 | 1:10560 |
| 13 | 225m SW | Cuttings | 1913 | 1:10560 |
| AH | 225m SW | Cuttings | 1889 | 1:10560 |
| AH | 226m SW | Cuttings | 1878 | 1:10560 |
| AH | 226m SW | Cuttings | 1878 | 1:10560 |
| AB | 236m W | Cuttings | 1878 | 1:10560 |
| AB | 237m W | Cuttings | 1889 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|----------|-----------------|---------------|
| 14 | 247m NE | Cuttings | 1994 | 1:10000 |

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

80

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining, ground workings and natural cavities map on **page 178**

| ID | Location | Land Use | Year of mapping | Mapping scale |
|----------|----------------|----------------------------------|-----------------|----------------|
| B | On site | Old Coal Pit | 1913 | 1:10560 |
| C | On site | Unspecified Disused Drift | 1964 | 1:10560 |
| C | On site | Unspecified Disused Drift | 1968 | 1:10560 |
| G | 4m N | Unspecified Disused Mine | 1964 | 1:10560 |
| C | 8m S | Unspecified Old Drift | 1936 | 1:10560 |
| C | 8m S | Unspecified Old Drift | 1947 | 1:10560 |
| G | 9m N | Colliery | 1936 | 1:10560 |
| C | 10m S | Unspecified Disused Drift | 1994 | 1:10000 |
| C | 10m S | Unspecified Disused Drift | 1980 | 1:10000 |
| J | 13m SE | Coal Pit | 1897 | 1:10560 |
| H | 13m N | Colliery | 1897 | 1:10560 |
| J | 18m N | Air Shaft | 1897 | 1:10560 |
| K | 19m E | Colliery | 1913 | 1:10560 |
| I | 19m W | Coal Pit | 1878 | 1:10560 |
| H | 38m NE | Unspecified Shaft | 1878 | 1:10560 |
| I | 51m W | Unspecified Shaft | 1878 | 1:10560 |
| O | 70m NE | Unspecified Disused Mine | 1968 | 1:10560 |
| P | 88m S | Disused Colliery | 1878 | 1:10560 |
| R | 102m S | Colliery | 1913 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|---------------------------|-----------------|---------------|
| U | 110m SE | Colliery | 1913 | 1:10560 |
| V | 127m SE | Old Coal Pit | 1913 | 1:10560 |
| H | 153m NE | Unspecified Shaft | 1947 | 1:10560 |
| H | 158m NE | Unspecified Disused Shaft | 1994 | 1:10000 |
| H | 158m NE | Unspecified Disused Shaft | 1980 | 1:10000 |
| H | 177m NE | Drift | 1936 | 1:10560 |
| H | 177m NE | Drift | 1947 | 1:10560 |
| AA | 178m NW | Old Coal Pit | 1905 | 1:10560 |
| AA | 179m NW | Old Coal Pit | 1900 | 1:10560 |
| X | 202m N | Unspecified Disused Drift | 1994 | 1:10000 |
| X | 202m N | Unspecified Disused Drift | 1980 | 1:10000 |
| AJ | 263m S | Colliery | 1878 | 1:10560 |
| W | 268m NW | Old Coal Pit | 1905 | 1:10560 |
| W | 270m NW | Old Coal Pit | 1900 | 1:10560 |
| AK | 277m S | Disused Colliery | 1900 | 1:10560 |
| AK | 279m S | Disused Colliery | 1905 | 1:10560 |
| AK | 279m S | Disused Colliery | 1913 | 1:10560 |
| AK | 298m SW | Colliery | 1878 | 1:10560 |
| BF | 627m SE | Old Coal Pit | 1897 | 1:10560 |
| BB | 657m S | Air Shaft | 1878 | 1:10560 |
| BR | 724m NE | Colliery | 1936 | 1:10560 |
| BT | 748m SW | Colliery | 1905 | 1:10560 |
| BT | 748m SW | Colliery | 1900 | 1:10560 |
| BU | 761m S | Disused Colliery | 1897 | 1:10560 |
| BU | 764m S | Disused Colliery | 1948 | 1:10560 |
| BU | 764m S | Disused Colliery | 1914 | 1:10560 |
| BU | 764m S | Disused Colliery | 1878 | 1:10560 |
| BU | 764m S | Disused Colliery | 1921 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|---------------------------|-----------------|---------------|
| BU | 764m S | Disused Colliery | 1913 | 1:10560 |
| BS | 765m N | Colliery | 1913 | 1:10560 |
| 31 | 765m SW | Air Shaft | 1878 | 1:10560 |
| BZ | 788m NE | Colliery | 1897 | 1:10560 |
| BS | 801m N | Disused Colliery | 1936 | 1:10560 |
| CB | 804m S | Disused Colliery | 1914 | 1:10560 |
| CB | 804m S | Disused Colliery | 1897 | 1:10560 |
| - | 805m W | Disused Colliery | 1913 | 1:10560 |
| CB | 806m S | Disused Colliery | 1921 | 1:10560 |
| - | 810m W | Disused Colliery | 1905 | 1:10560 |
| - | 810m W | Disused Colliery | 1900 | 1:10560 |
| CD | 815m NW | Old Coal Pit | 1913 | 1:10560 |
| CD | 816m NW | Old Coal Pit | 1905 | 1:10560 |
| CE | 818m N | Unspecified Shaft | 1905 | 1:10560 |
| CE | 819m N | Unspecified Shaft | 1900 | 1:10560 |
| CD | 820m NW | Old Coal Pit | 1900 | 1:10560 |
| CE | 820m N | Unspecified Disused Shaft | 1967 | 1:10560 |
| CE | 825m N | Unspecified Old Shaft | 1913 | 1:10560 |
| CE | 826m N | Unspecified Old Shaft | 1948 | 1:10560 |
| BU | 827m S | Unspecified Disused Mine | 1967 | 1:10560 |
| CD | 827m NW | Unspecified Shaft | 1913 | 1:10560 |
| CE | 829m N | Unspecified Disused Shaft | 1992 | 1:10000 |
| CE | 829m N | Unspecified Disused Shaft | 1988 | 1:10000 |
| CE | 829m N | Unspecified Disused Shaft | 1974 | 1:10000 |
| 35 | 852m S | Coal Pit | 1878 | 1:10560 |
| - | 873m W | Old Coal Slant | 1913 | 1:10560 |
| CL | 934m SE | Old Colliery | 1897 | 1:10560 |
| BR | 963m N | Unspecified Mine | 1968 | 1:10560 |



| ID | Location | Land Use | Year of mapping | Mapping scale |
|----|----------|-------------------|-----------------|---------------|
| CL | 971m SE | Unspecified Shaft | 1897 | 1:10560 |
| BR | 976m NE | Colliery | 1913 | 1:10560 |
| - | 992m W | Disused Colliery | 1900 | 1:10560 |
| - | 996m W | Disused Colliery | 1913 | 1:10560 |
| - | 996m W | Disused Colliery | 1905 | 1:10560 |

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.



18.8 JPB mining areas

Records on site **0**

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site **1**

Areas which could be affected by past, current or future coal mining.

| Location | Details |
|----------|---|
| On site | The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider. |

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site **0**

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site **0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

| | |
|-----------------|---|
| Records on site | 0 |
|-----------------|---|

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

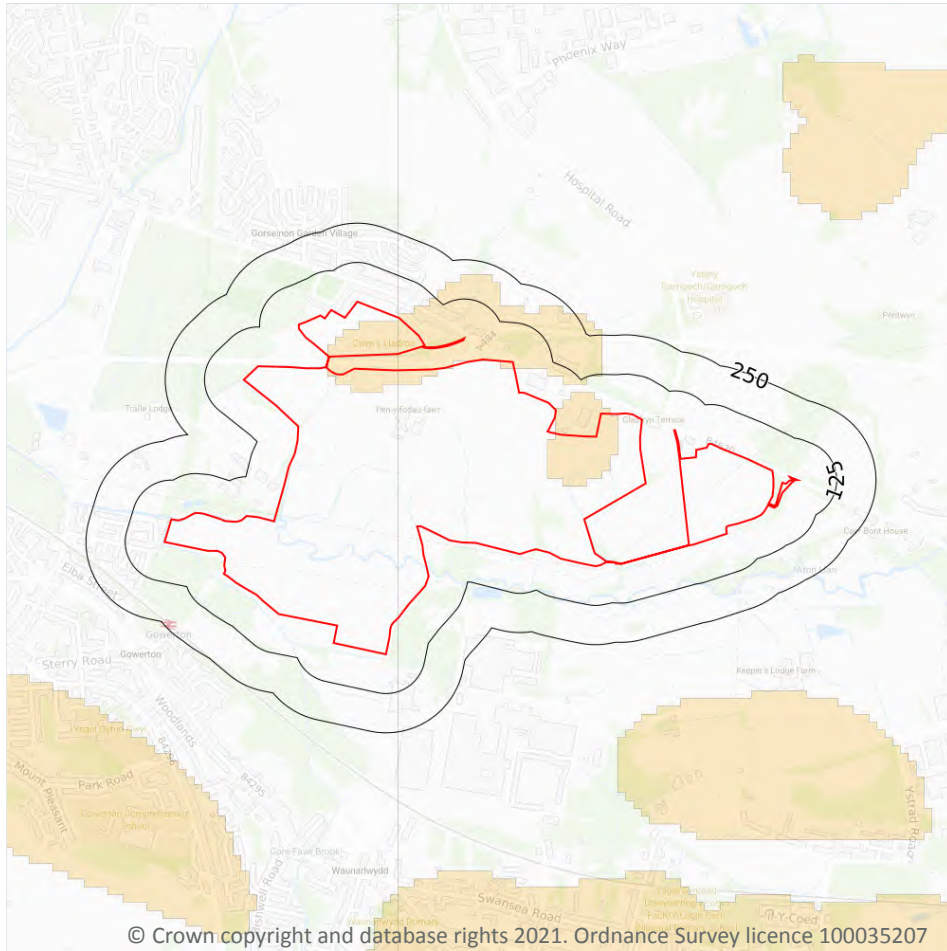
18.13 Clay mining

| | |
|-----------------|---|
| Records on site | 0 |
|-----------------|---|

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon



— Site Outline
Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site

2

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 196**

| Location | Estimated properties affected | Radon Protection Measures required |
|----------|-------------------------------|------------------------------------|
| On site | Between 3% and 5% | Basic |
| On site | Less than 1% | None** |

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

69

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

| Location | Arsenic | Bioaccessible Arsenic | Lead | Bioaccessible Lead | Cadmium | Chromium | Nickel |
|----------|---------------|-----------------------|-----------|--------------------|-----------|---------------|---------------|
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |



| Location | Arsenic | Bioaccessible Arsenic | Lead | Bioaccessible Lead | Cadmium | Chromium | Nickel |
|----------|---------------|-----------------------|-----------|--------------------|-----------|---------------|---------------|
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |



| Location | Arsenic | Bioaccessible Arsenic | Lead | Bioaccessible Lead | Cadmium | Chromium | Nickel |
|----------|---------------|-----------------------|-----------|--------------------|-----------|---------------|---------------|
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| On site | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 1m N | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 8m NW | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 14m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 14m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 15m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 15m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 15m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 15m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |
| 28m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 28m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 29m SW | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 35m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |



| Location | Arsenic | Bioaccessible Arsenic | Lead | Bioaccessible Lead | Cadmium | Chromium | Nickel |
|----------|---------------|-----------------------|-----------|--------------------|-----------|---------------|---------------|
| 36m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 36m E | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 45m SE | 25 - 35 mg/kg | No data | 100 mg/kg | 60 mg/kg | 1.8 mg/kg | 60 - 90 mg/kg | 30 - 45 mg/kg |

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

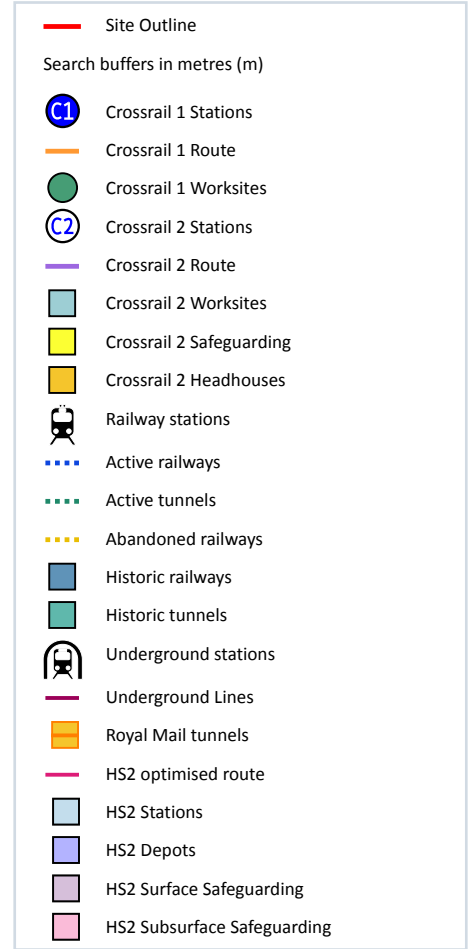
0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

| | |
|----------------------------|----------|
| Records within 250m | 0 |
|----------------------------|----------|

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

| | |
|----------------------------|-----------|
| Records within 250m | 76 |
|----------------------------|-----------|

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 203**

| Location | Land Use | Year of mapping | Mapping scale |
|----------|-------------------------|-----------------|---------------|
| On site | Railway Sidings | 1955 | 2500 |
| On site | Tramway Sidings | 1879 | 2500 |
| On site | Tramway Sidings | 1916 | 2500 |
| On site | Mineral Railway Sidings | 1899 | 2500 |
| On site | Mineral Railway Sidings | 1916 | 2500 |
| On site | Mineral Railway Sidings | 1935 | 2500 |
| On site | Mineral Railway Sidings | 1898 | 2500 |
| On site | Mineral Railway Sidings | 1936 | 2500 |
| On site | Mineral Railway Sidings | 1965 | 2500 |
| On site | Mineral Railway Sidings | 1958 | 2500 |
| On site | Railway Sidings | 1898 | 2500 |
| On site | Mineral Railway Sidings | 1900 | 10560 |
| On site | Mineral Railway Sidings | 1913 | 10560 |
| On site | Mineral Railway Sidings | 1897 | 10560 |
| On site | Mineral Railway Sidings | 1936 | 10560 |
| On site | Mineral Railway Sidings | 1905 | 10560 |
| On site | Mineral Railway Sidings | 1964 | 10560 |



| Location | Land Use | Year of mapping | Mapping scale |
|----------------|--------------------------------|-----------------|---------------|
| On site | Mineral Railway Sidings | 1947 | 10560 |
| On site | Mineral Railway Sidings | 1938 | 10560 |
| On site | Mineral Railway Sidings | 1968 | 10560 |
| On site | Railway Sidings | 1948 | 10560 |
| On site | Railway Sidings | 1936 | 10560 |
| On site | Railway Sidings | 1947 | 10560 |
| 4m N | Railway Sidings | 1964 | 10560 |
| 7m N | Mineral Railway Sidings | 1913 | 10560 |
| 12m S | Railway Sidings | 1947 | 10560 |
| 17m NW | Railway Sidings | 1916 | 2500 |
| 17m NW | Railway Sidings | 1935 | 2500 |
| 19m E | Tramway Sidings | 1913 | 10560 |
| 21m S | Mineral Railway Sidings | 1913 | 10560 |
| 25m NE | Railway Sidings | 1916 | 2500 |
| 34m W | Railway Sidings | 1936 | 10560 |
| 36m S | Railway Sidings | 1938 | 10560 |
| 42m N | Railway Sidings | 1955 | 2500 |
| 51m NE | Railway Sidings | 1916 | 2500 |
| 61m NE | Railway Sidings | 1955 | 2500 |
| 74m S | Railway Sidings | 1955 | 2500 |
| 98m N | Railway Sidings | 1955 | 2500 |
| 136m N | Railway Sidings | 1958 | 2500 |
| 167m S | Railway Sidings | 1879 | 2500 |
| 169m S | Railway Sidings | 1878 | 10560 |
| 176m S | Railway Sidings | 1889 | 10560 |
| 178m SW | Mineral Railway Sidings | 1905 | 10560 |
| 179m S | Railway Sidings | 1878 | 10560 |
| 181m SW | Mineral Railway Sidings | 1913 | 10560 |



| Location | Land Use | Year of mapping | Mapping scale |
|----------|-------------------------|-----------------|---------------|
| 183m SW | Railway Sidings | 1938 | 10560 |
| 184m S | Railway Sidings | 1948 | 10560 |
| 189m SW | Mineral Railway Sidings | 1899 | 2500 |
| 189m SW | Railway Sidings | 1948 | 10560 |
| 193m SW | Mineral Railway Sidings | 1900 | 10560 |
| 193m SW | Tramway Sidings | 1879 | 2500 |
| 194m SW | Railway Sidings | 1916 | 2500 |
| 195m SW | Railway Sidings | 1936 | 10560 |
| 195m SW | Mineral Railway Sidings | 1899 | 2500 |
| 196m SW | Disused Railway Sidings | 1965 | 2500 |
| 197m SW | Railway Sidings | 1958 | 2500 |
| 208m SW | Railway Sidings | 1936 | 10560 |
| 211m SW | Railway Sidings | 1916 | 2500 |
| 213m SW | Railway Sidings | 1935 | 2500 |
| 214m SW | Railway Sidings | 1900 | 10560 |
| 219m W | Railway Sidings | 1964 | 10560 |
| 219m W | Railway Sidings | 1967 | 10560 |
| 219m SW | Railway Sidings | 1879 | 2500 |
| 219m SW | Railway Sidings | 1916 | 2500 |
| 219m SW | Railway Sidings | 1935 | 2500 |
| 221m SW | Railway Sidings | 1965 | 2500 |
| 221m SW | Railway Sidings | 1958 | 2500 |
| 221m SW | Railway Sidings | 1899 | 2500 |
| 221m SE | Railway Sidings | 1947 | 10560 |
| 228m SW | Railway Sidings | 1878 | 10560 |
| 231m SW | Railway Sidings | 1967 | 10560 |
| 237m SW | Railway Sidings | 1916 | 2500 |
| 237m SW | Railway Sidings | 1936 | 10560 |



| Location | Land Use | Year of mapping | Mapping scale |
|----------|-----------------|-----------------|---------------|
| 237m SW | Railway Sidings | 1879 | 2500 |
| 238m SW | Railway Sidings | 1899 | 2500 |
| 239m SW | Railway Sidings | 1936 | 10560 |

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

16

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on **page 203**

| Location | Description |
|----------------|------------------|
| On site | Abandoned |
| On site | Abandoned |
| On site | Abandoned |
| On site | Abandoned |
| 17m S | Abandoned |
| 17m S | Abandoned |
| 21m S | Abandoned |
| 24m W | Razed |
| 30m NW | Abandoned |
| 37m W | Abandoned |



| Location | Description |
|----------|-------------|
| 48m S | Abandoned |
| 56m SW | Razed |
| 146m SW | Razed |
| 180m NW | Abandoned |
| 197m SW | Razed |
| 231m SW | Razed |

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

4

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 203**

| Location | Name | Type |
|----------|-----------------------|-------------|
| 191m SW | South Wales Main Line | rail |
| 194m SW | South Wales Main Line | rail |
| 195m SW | Not given | Multi Track |
| 197m SW | South Wales Main Line | rail |

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.



21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

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Appendix C

Historic Ordnance Survey Map

Site Details:

260113.56612636862,
196868.91884575313

Client Ref: PO-21-056
Report Ref: HYG1-8369498_SS_2_1
Grid Ref: 261513, 196876

Map Name: County Series

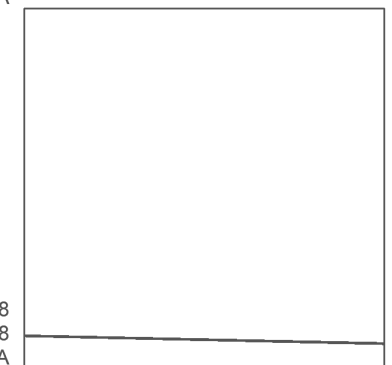
Map date: 1878

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1878
Edition N/A
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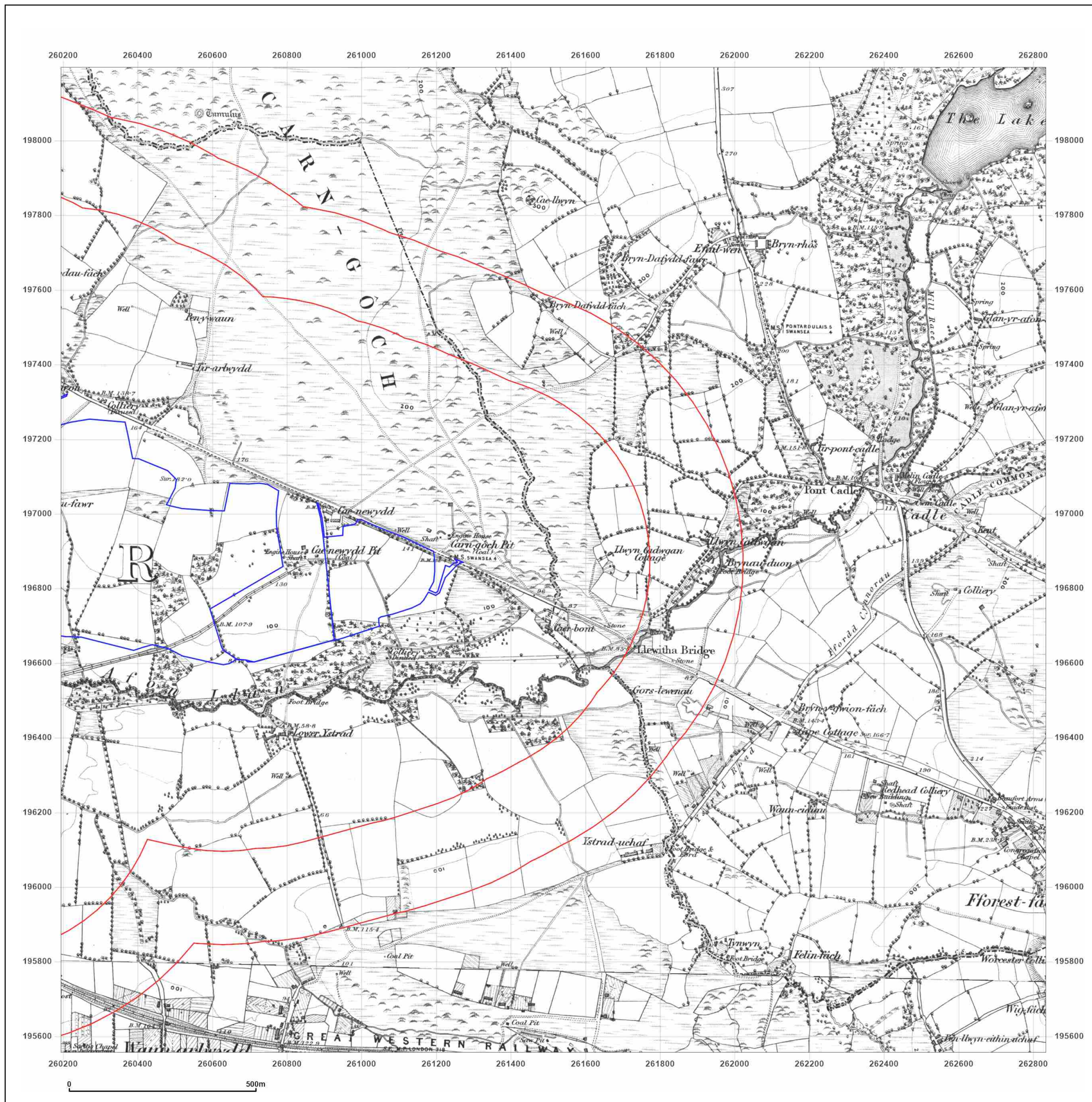
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Report Ref: HYG1-8369498_SS_2_1
Grid Ref: 261513, 196876

Map Name: County Series

Map date: 1897

Scale: 1:10,560

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Revised 1897
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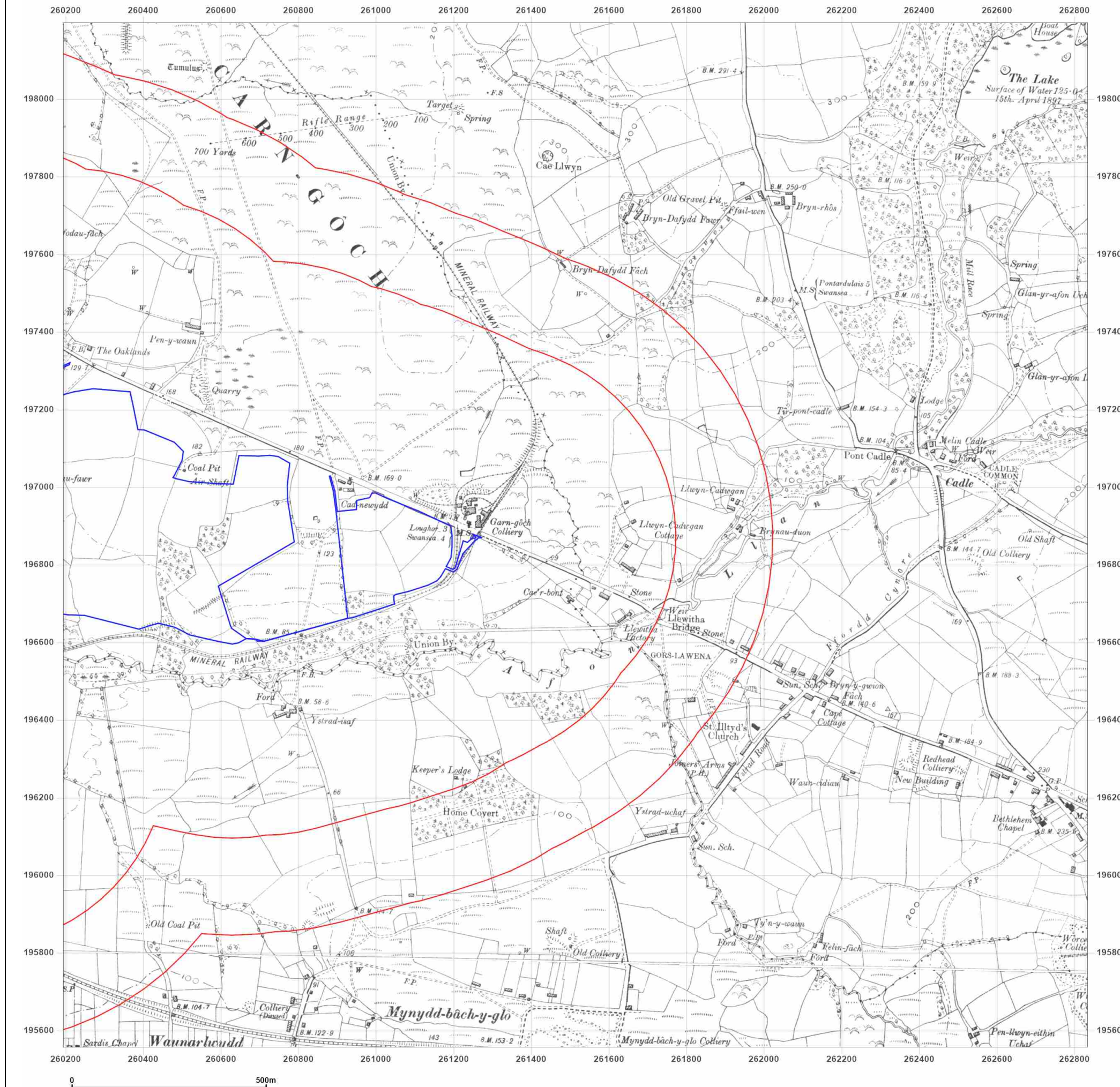
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Report Ref: HYG1-8369498_SS_2_1
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Map Name: County Series

Map date: 1913-1914

Scale: 1:10,560

Printed at: 1:10,560

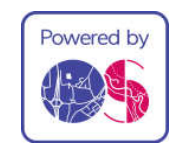


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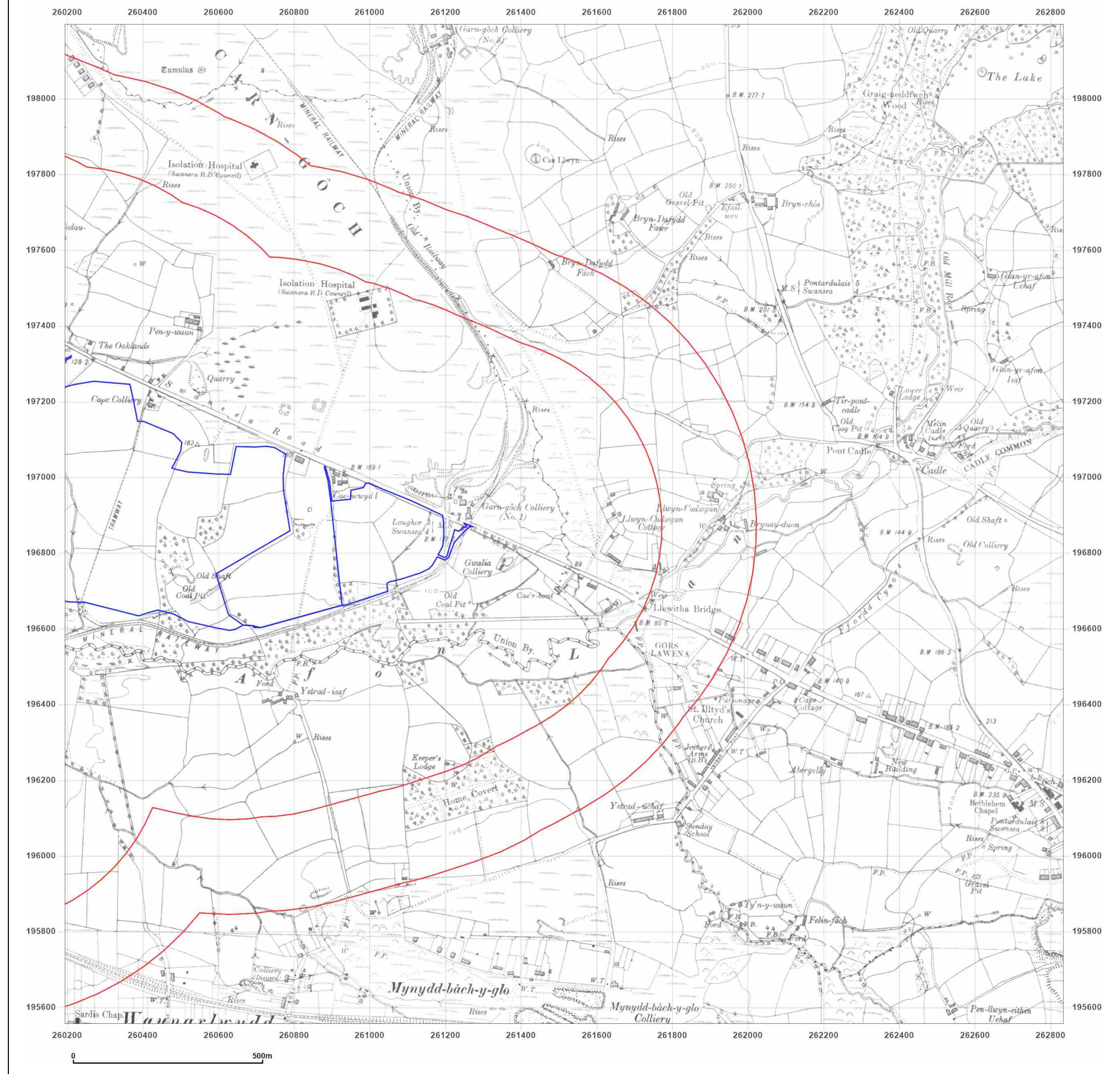
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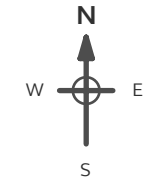
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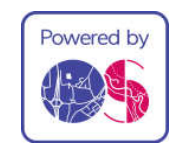


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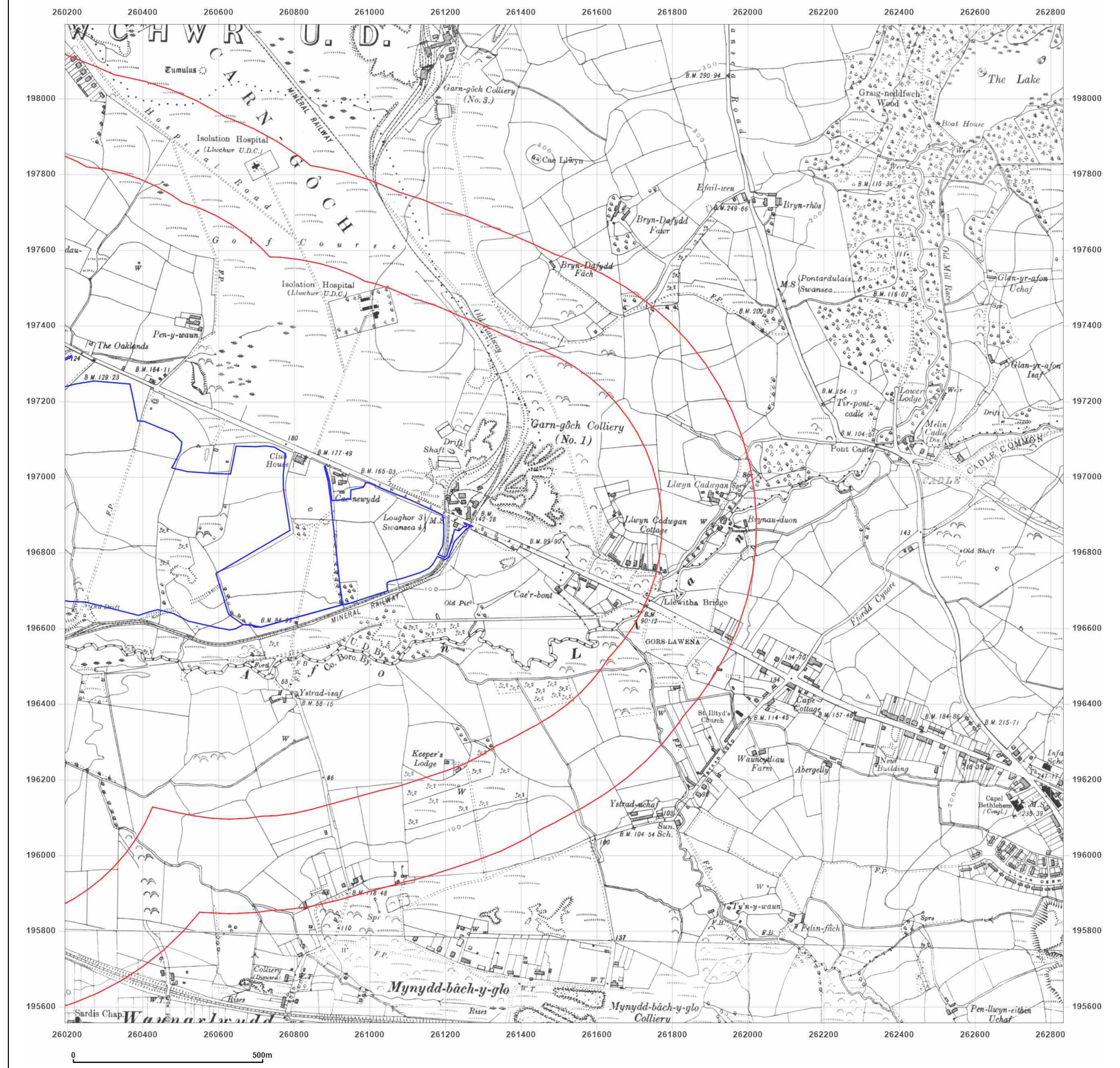
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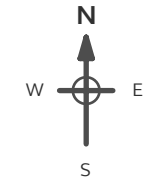
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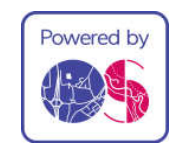
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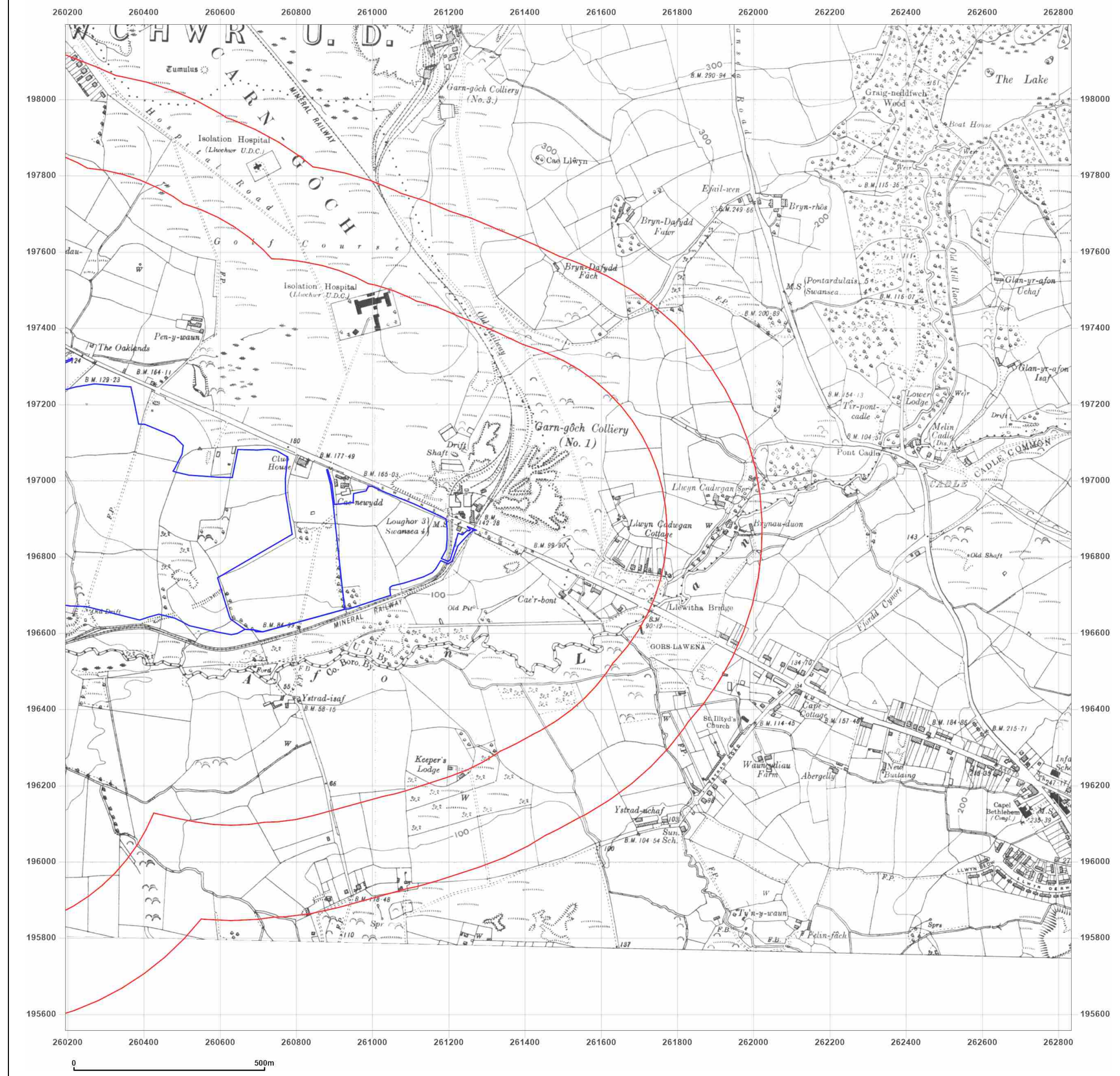
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Map Name: County Series

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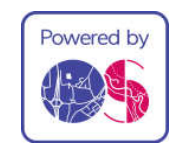


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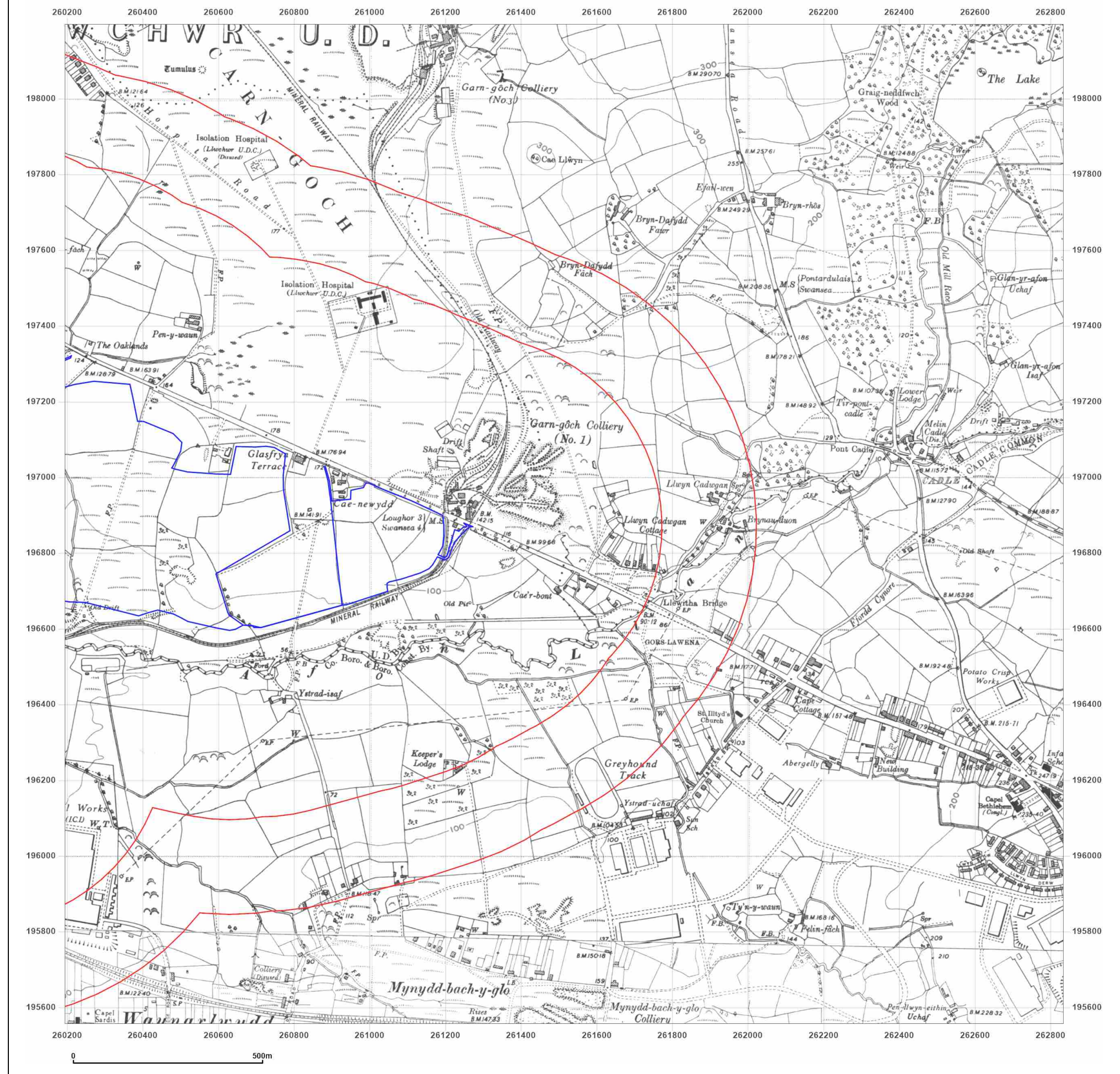
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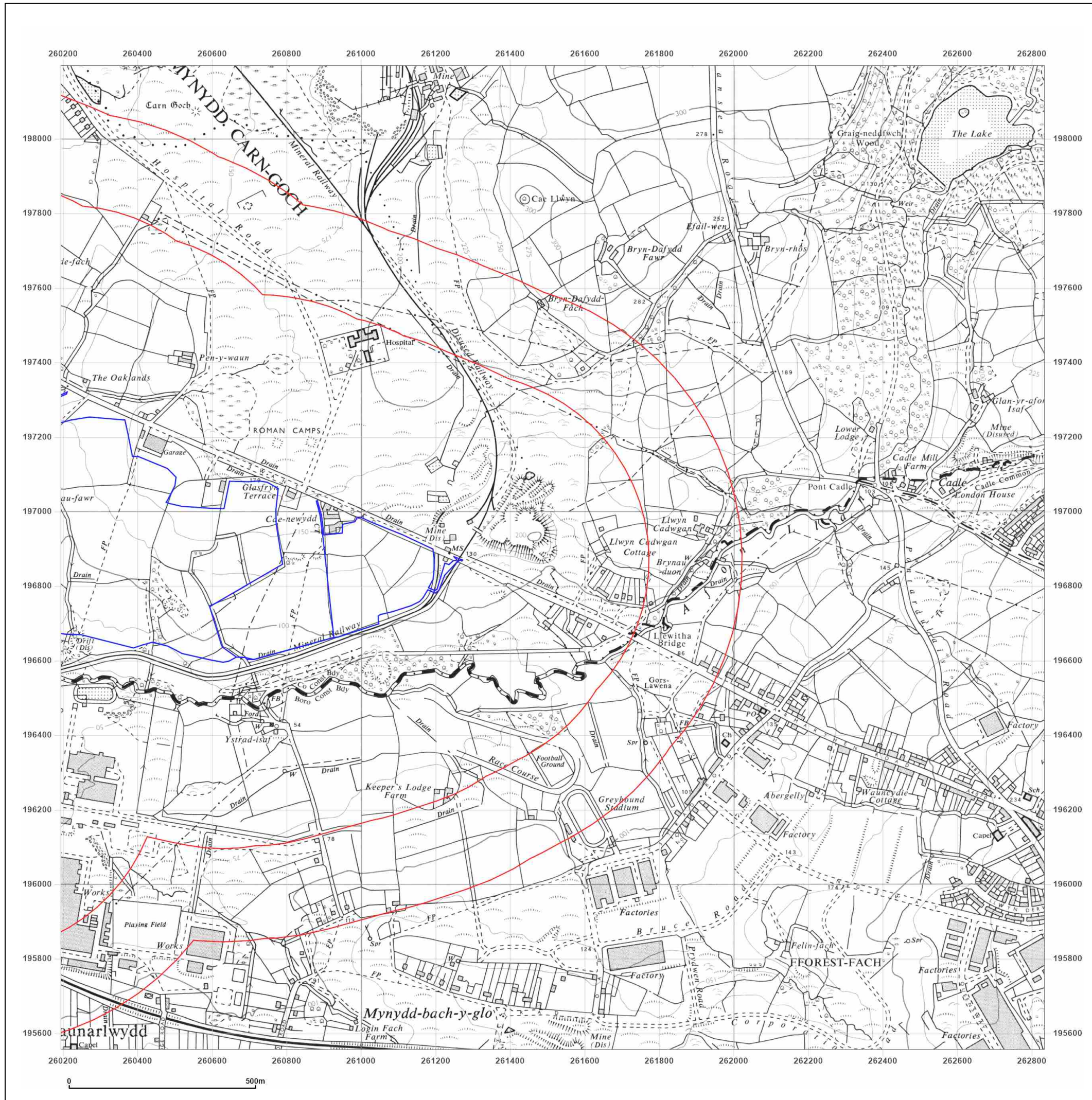


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Map Name: Provisional

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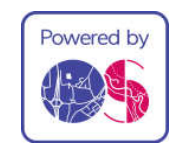
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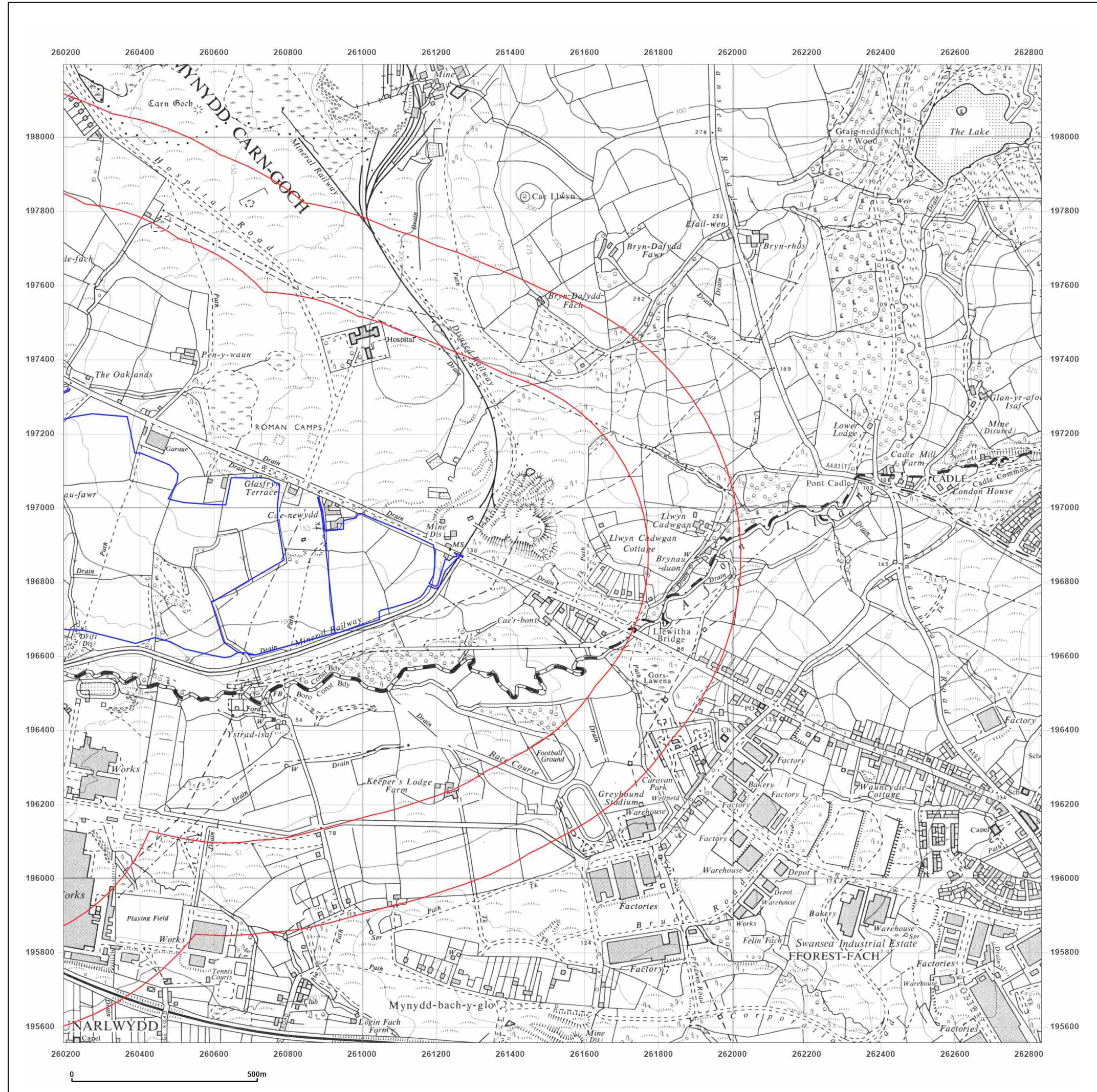
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Map Name: National Grid

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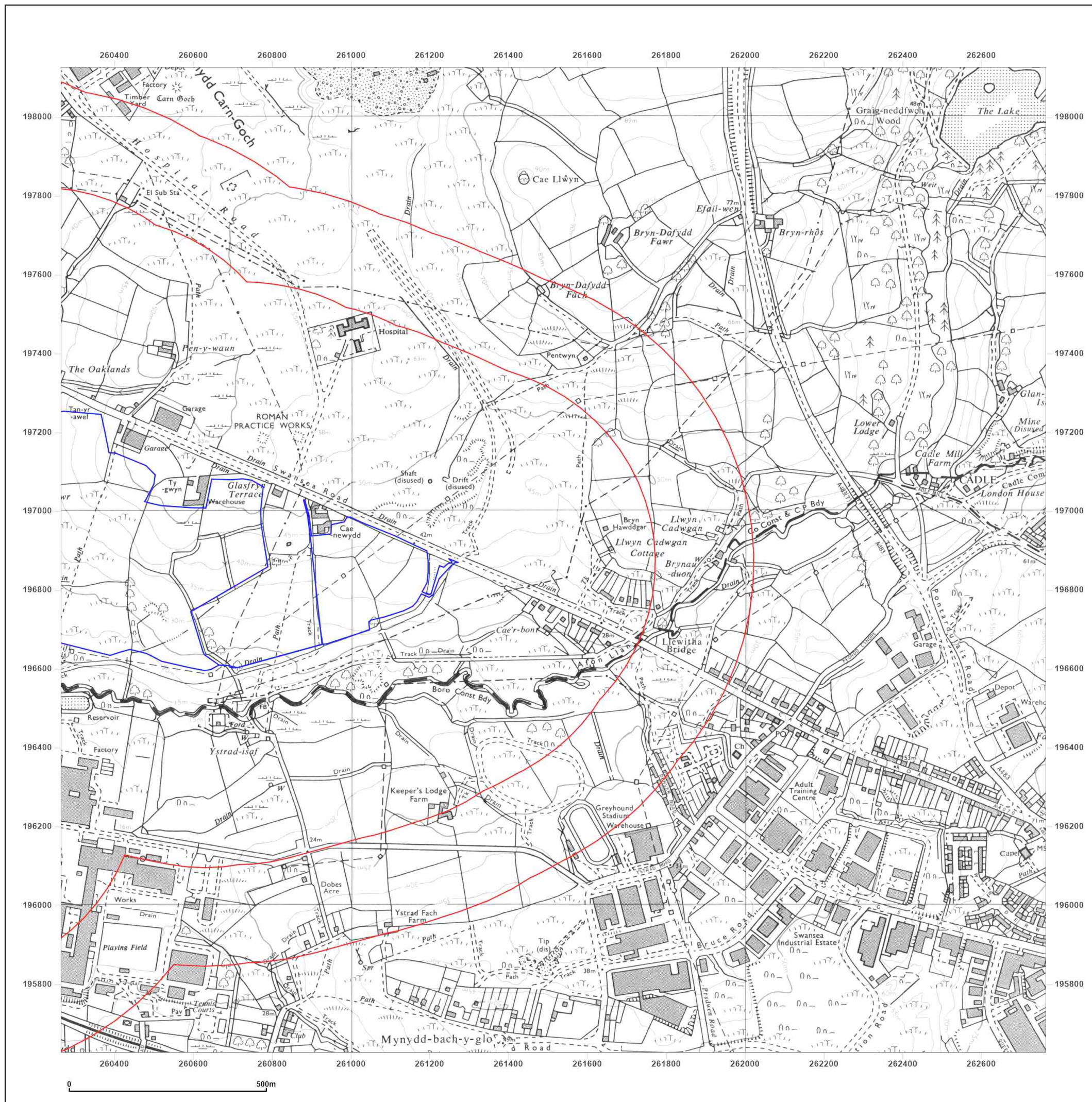
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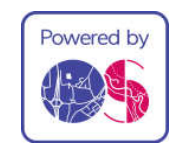
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Surveyed 1977
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A



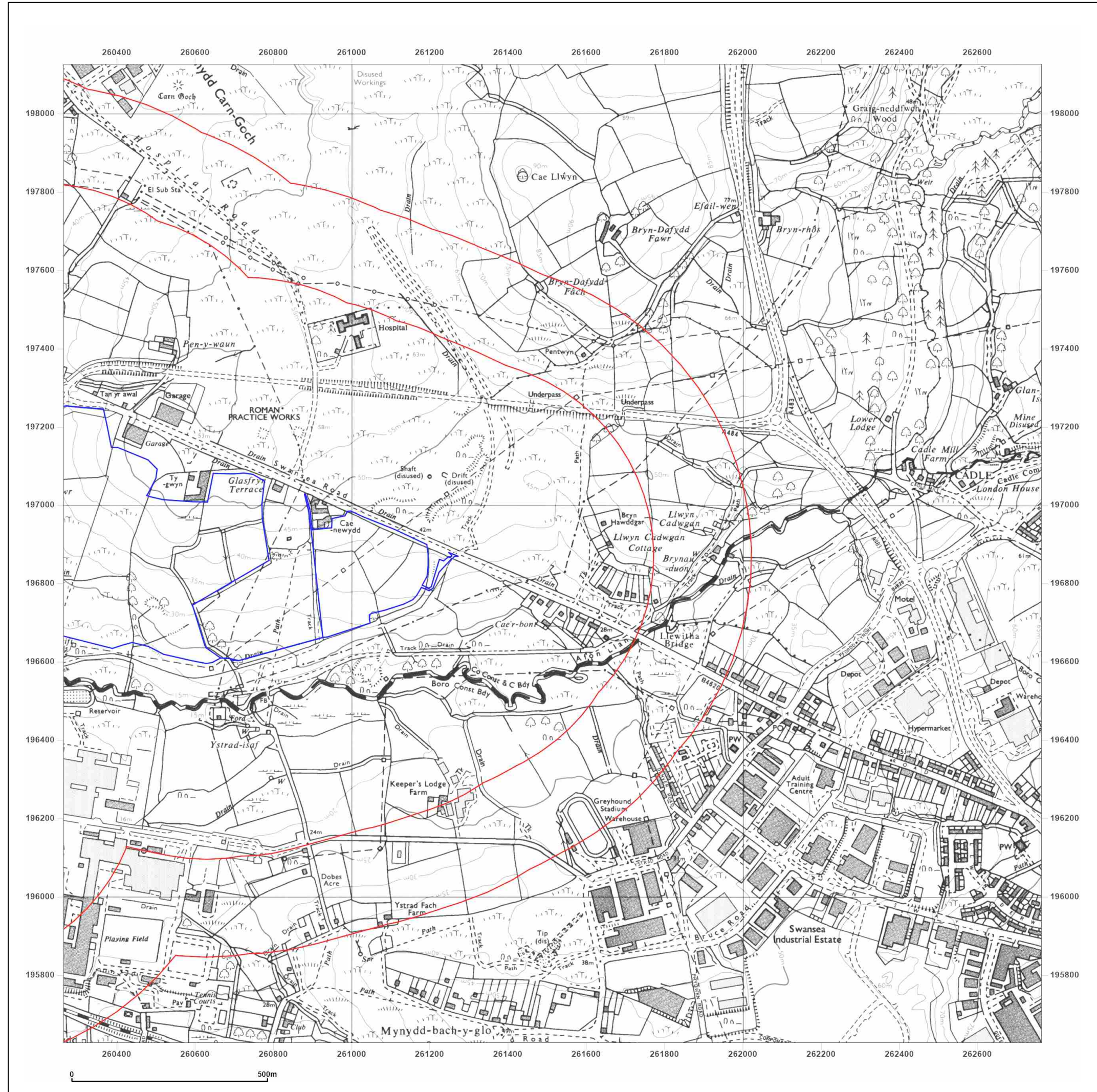
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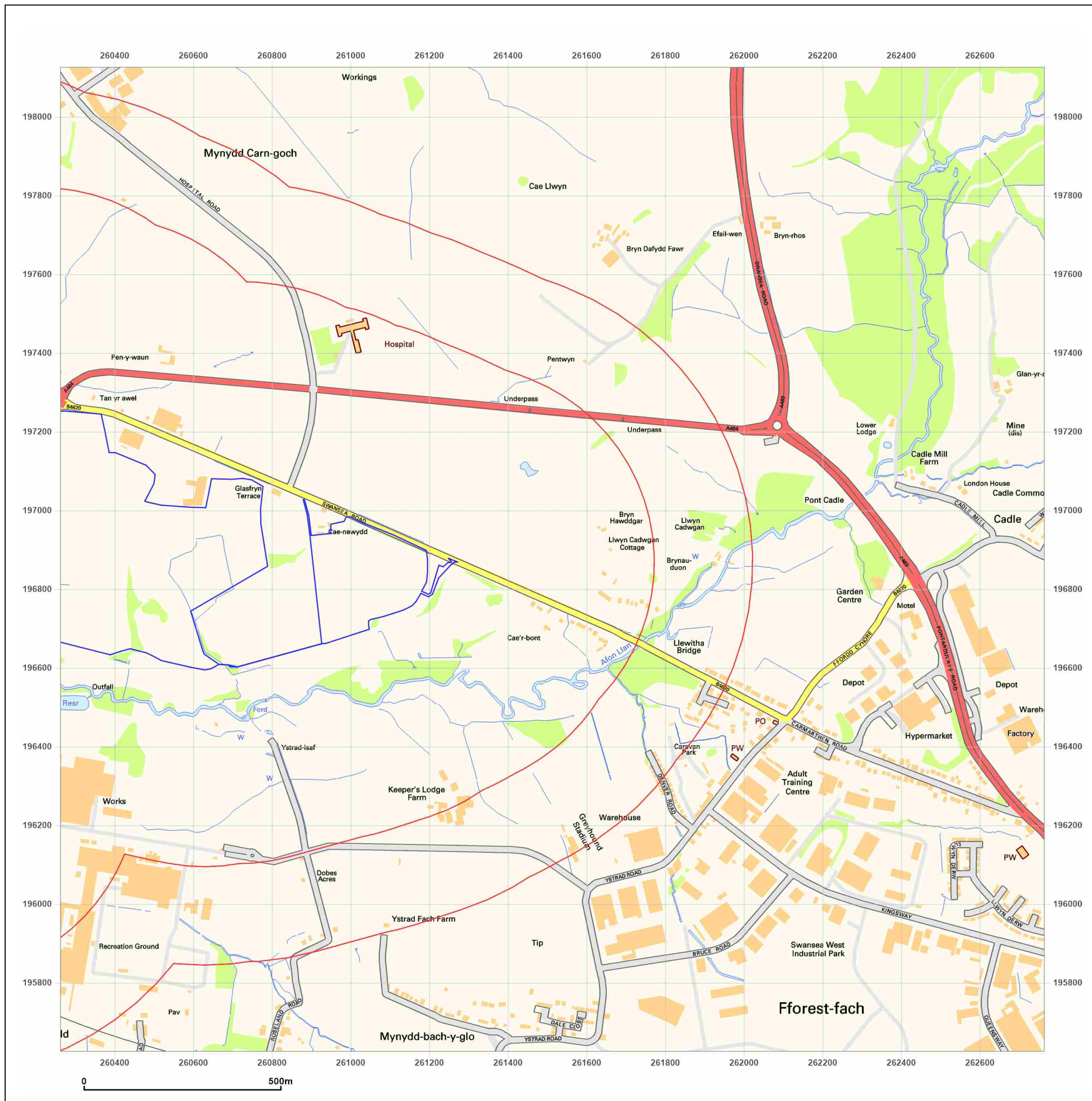
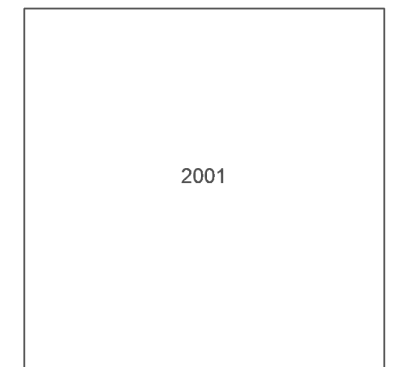
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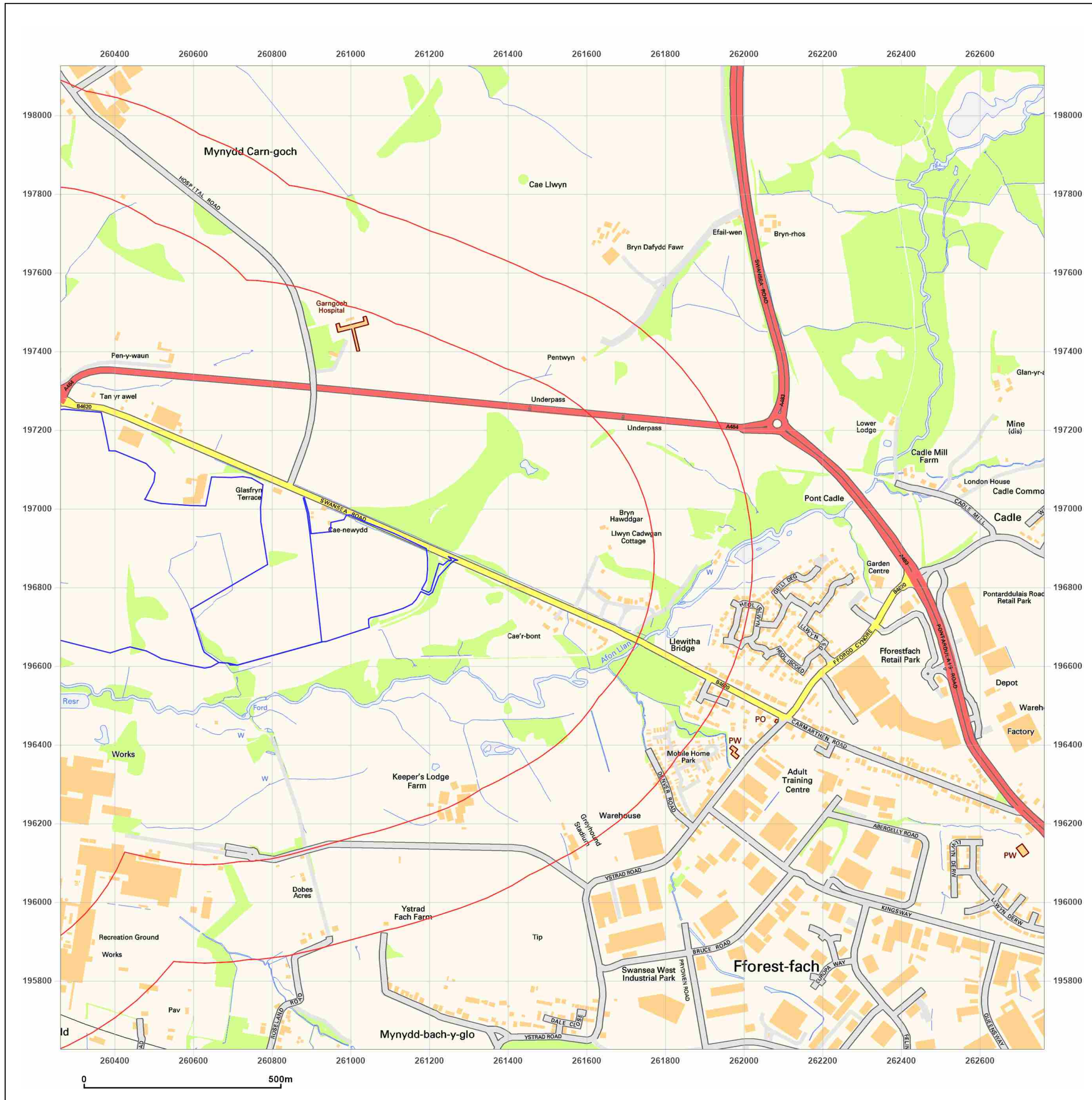
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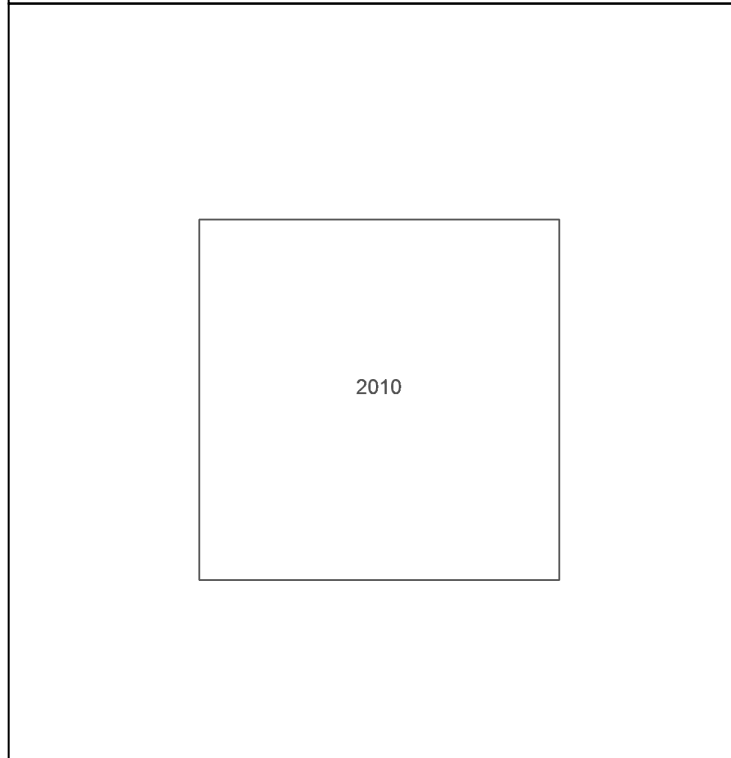
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Scale: 1:10,000

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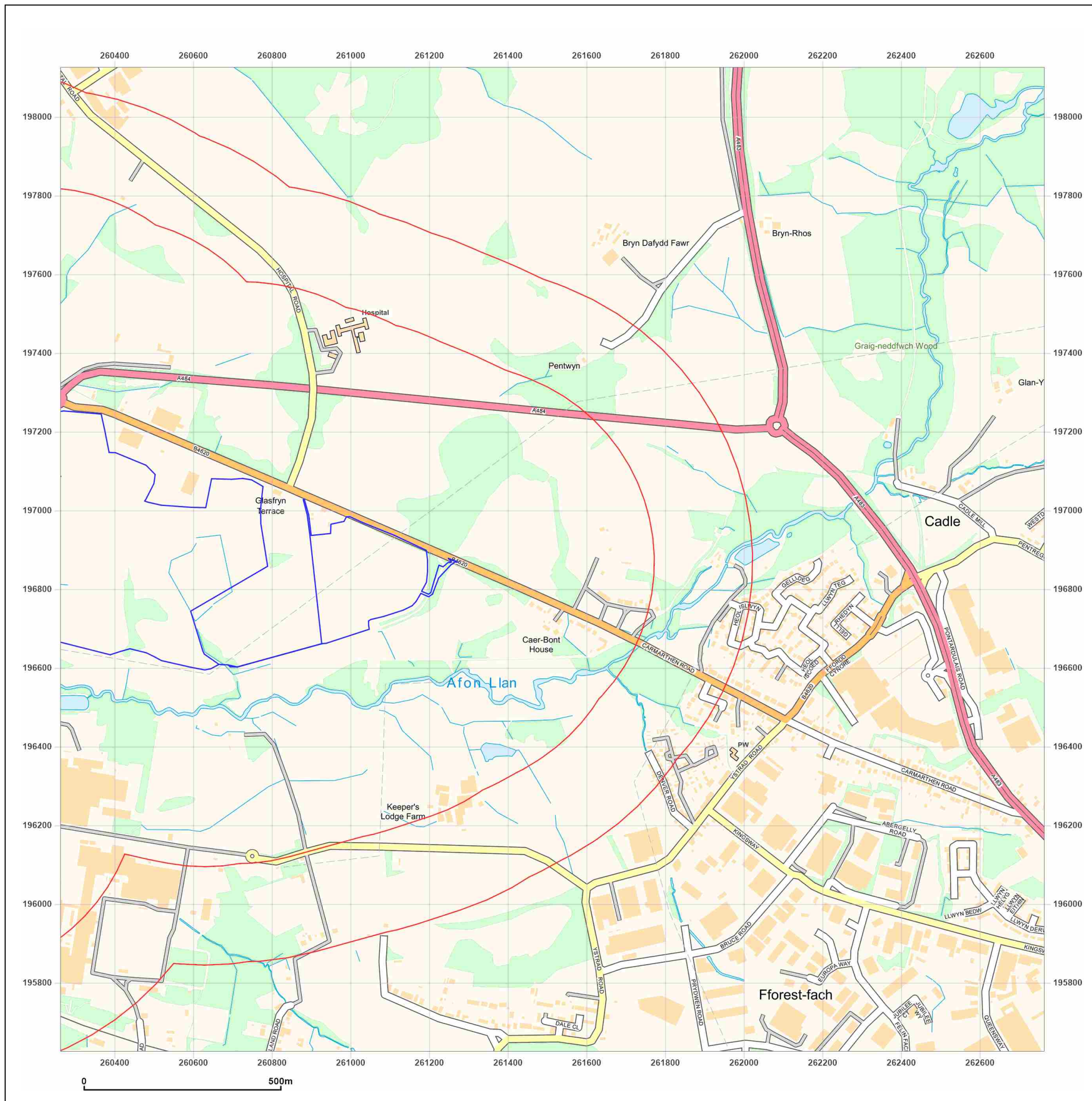
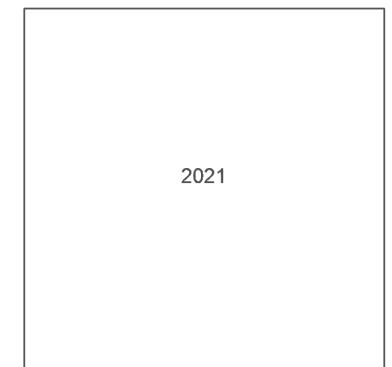
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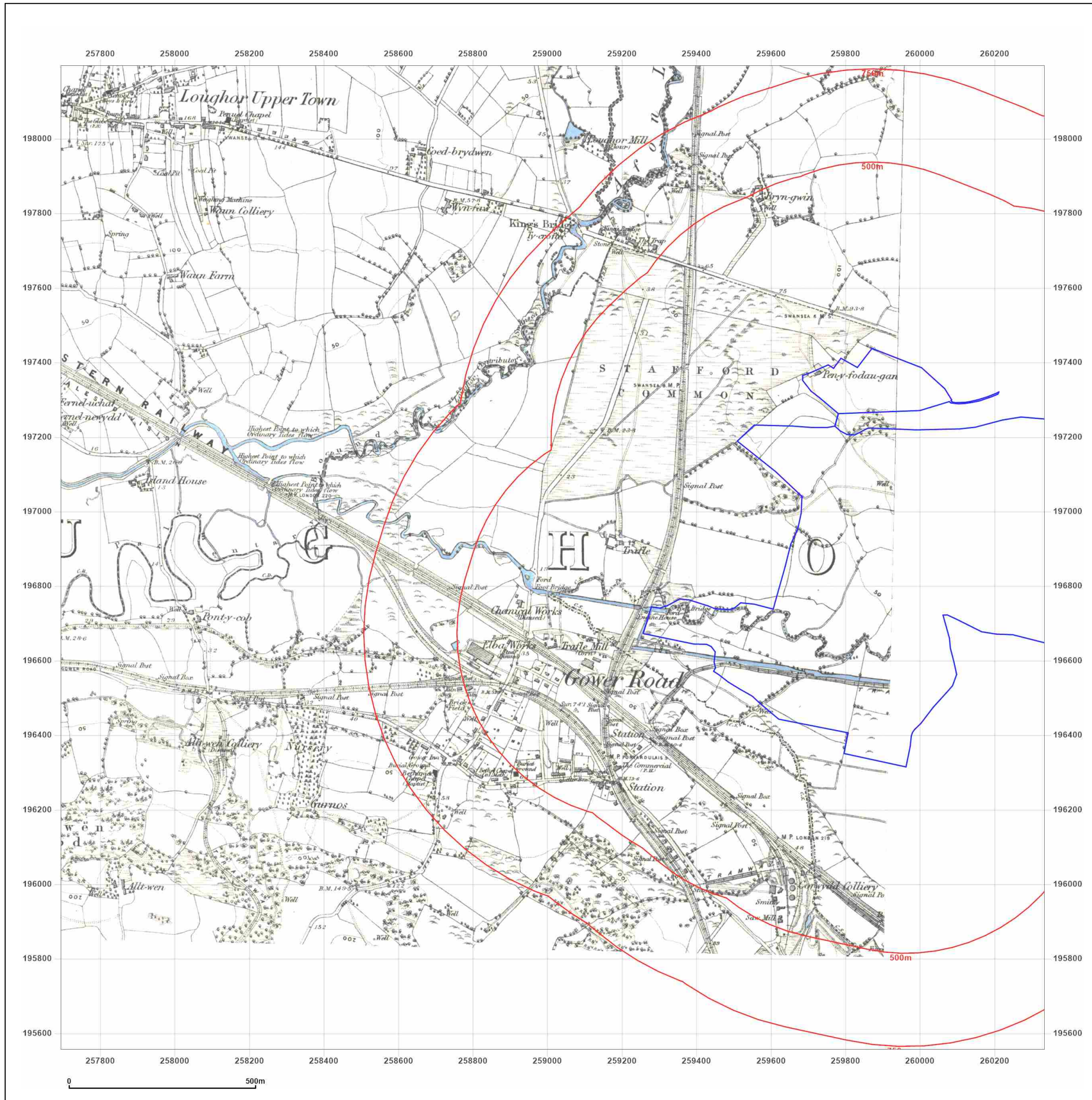
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Site Details:

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Client Ref: PO-21-056
Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: County Series

Map date: 1878

Scale: 1:10,560

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Surveyed 1878
Revised 1878
Edition N/A
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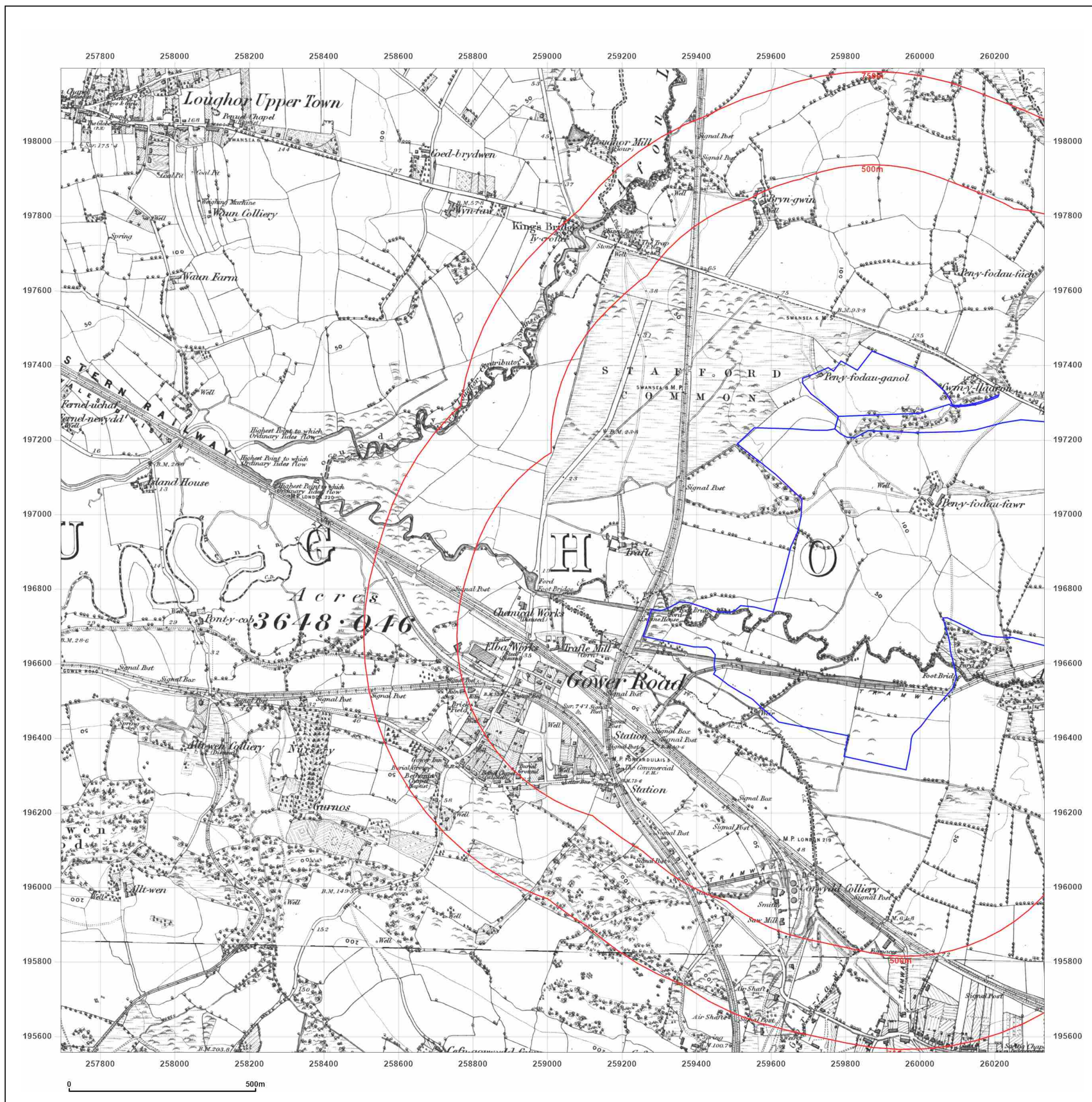
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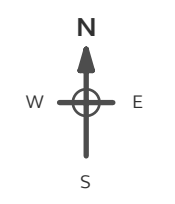
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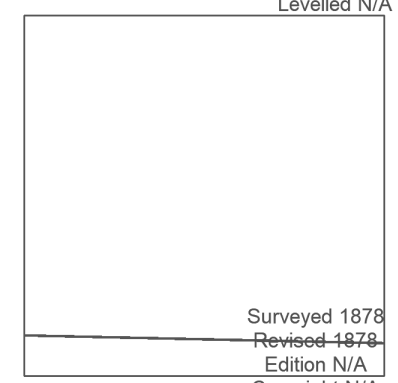
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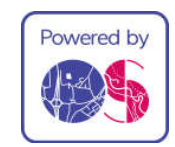
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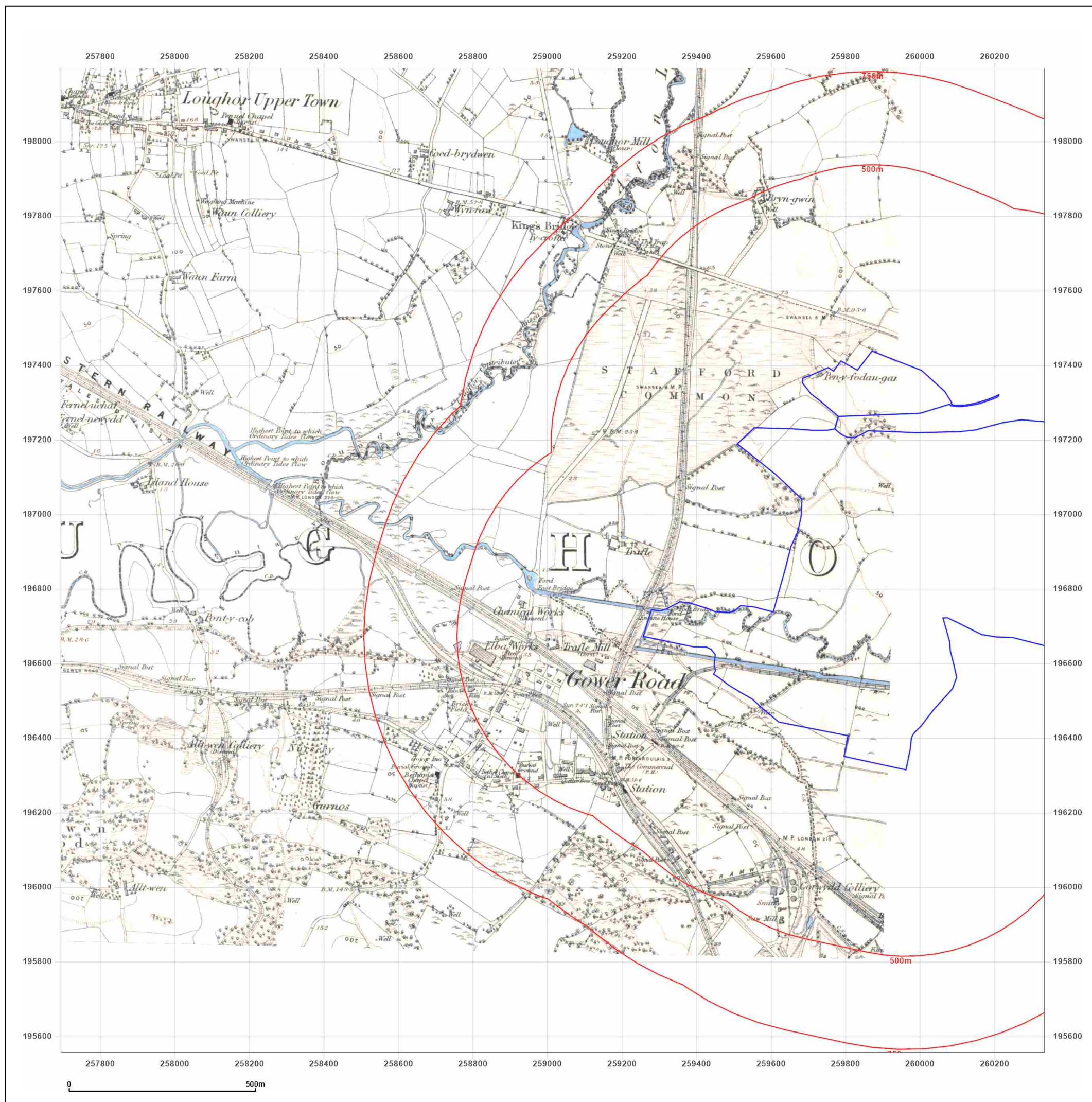
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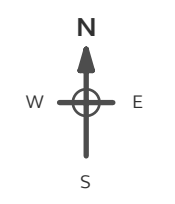
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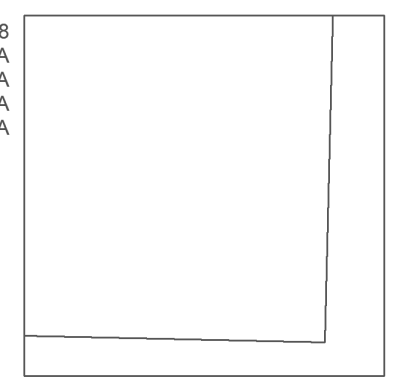
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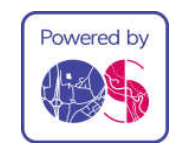
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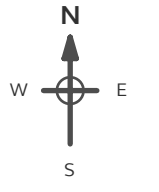
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Map Name: County Series

Map date: 1897-1900

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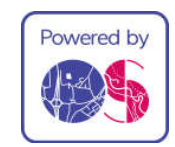
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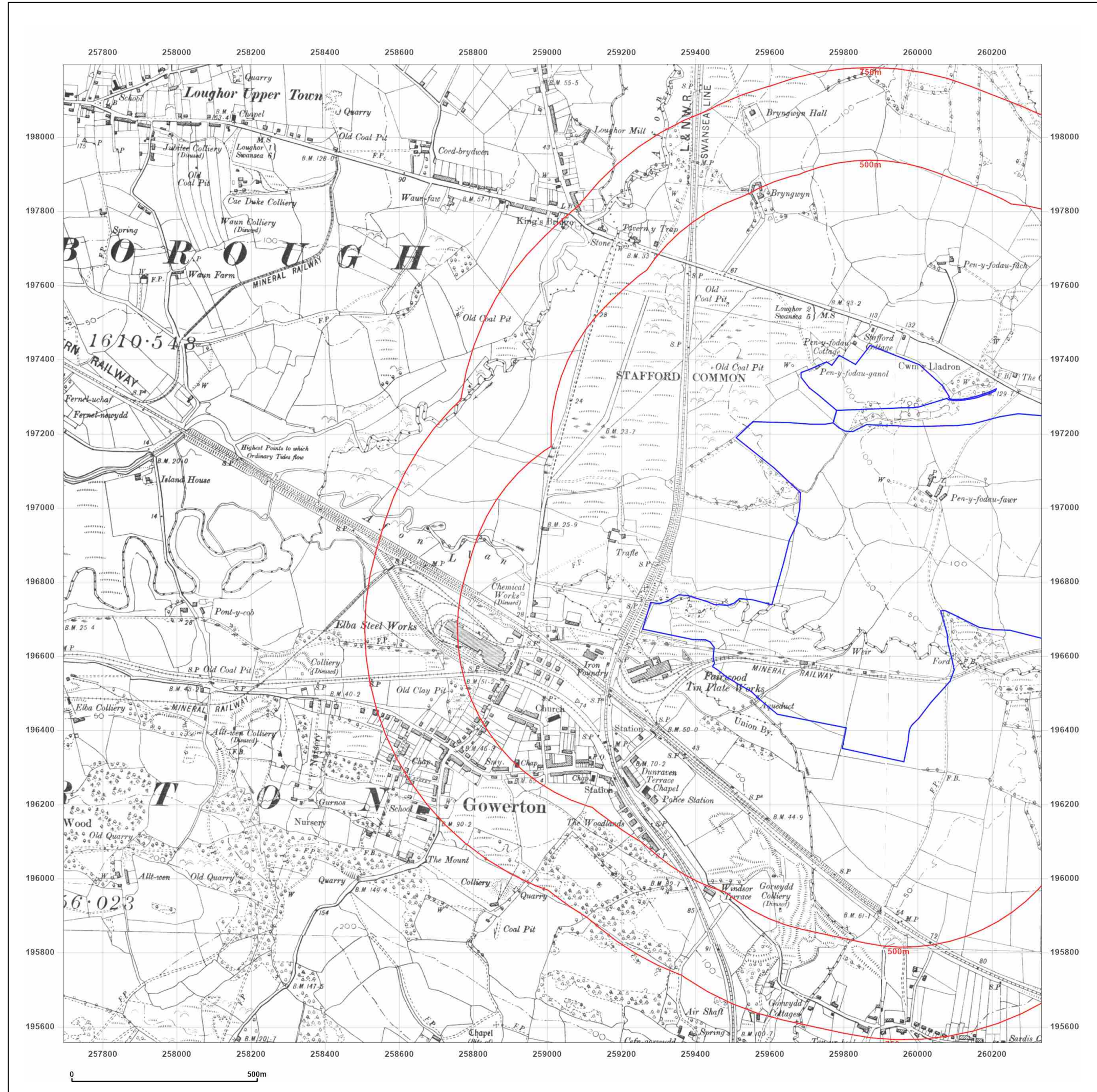
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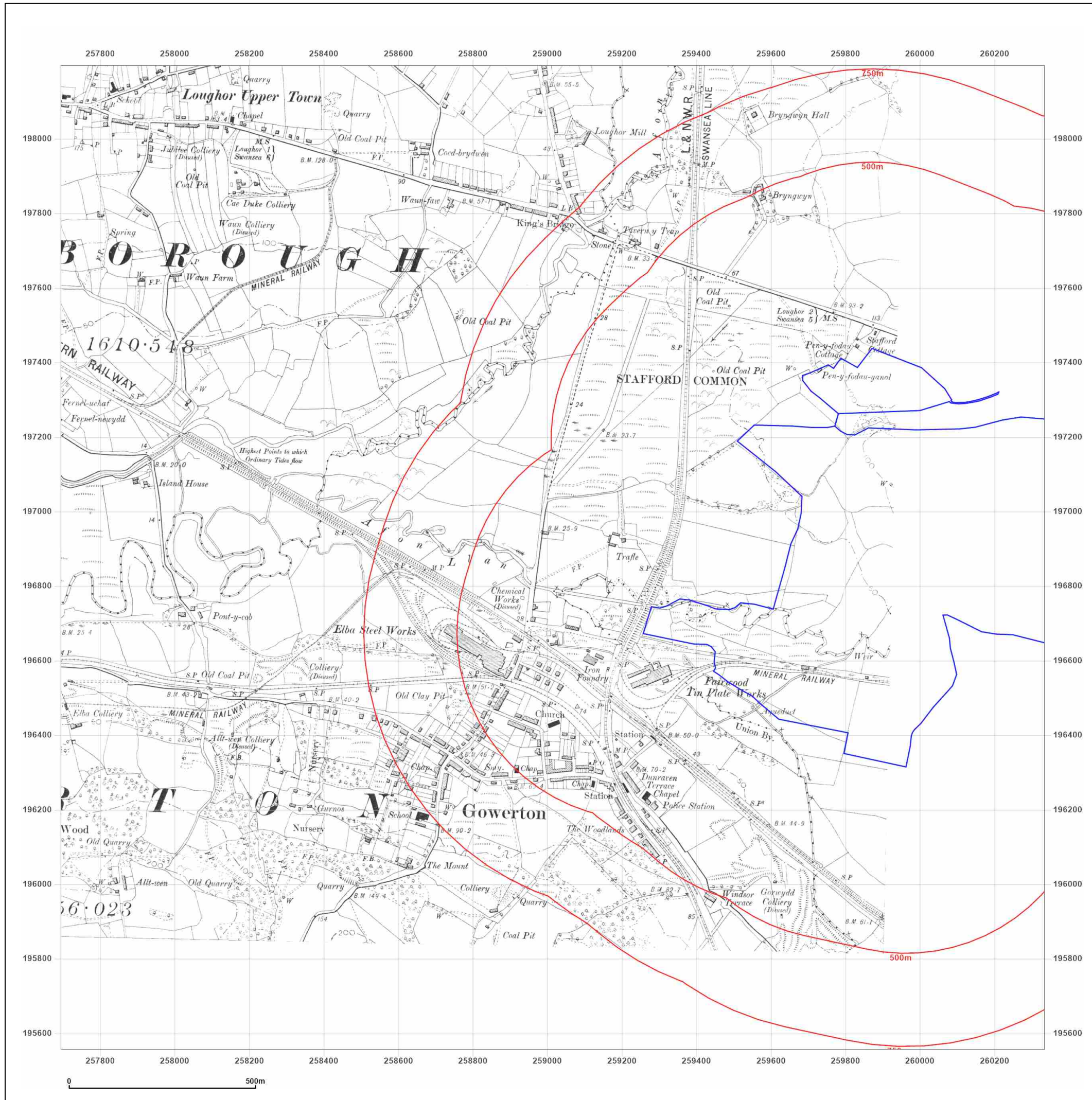


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Client Ref: PO-21-056
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Grid Ref: 259013, 196876

Map Name: County Series

Map date: 1905

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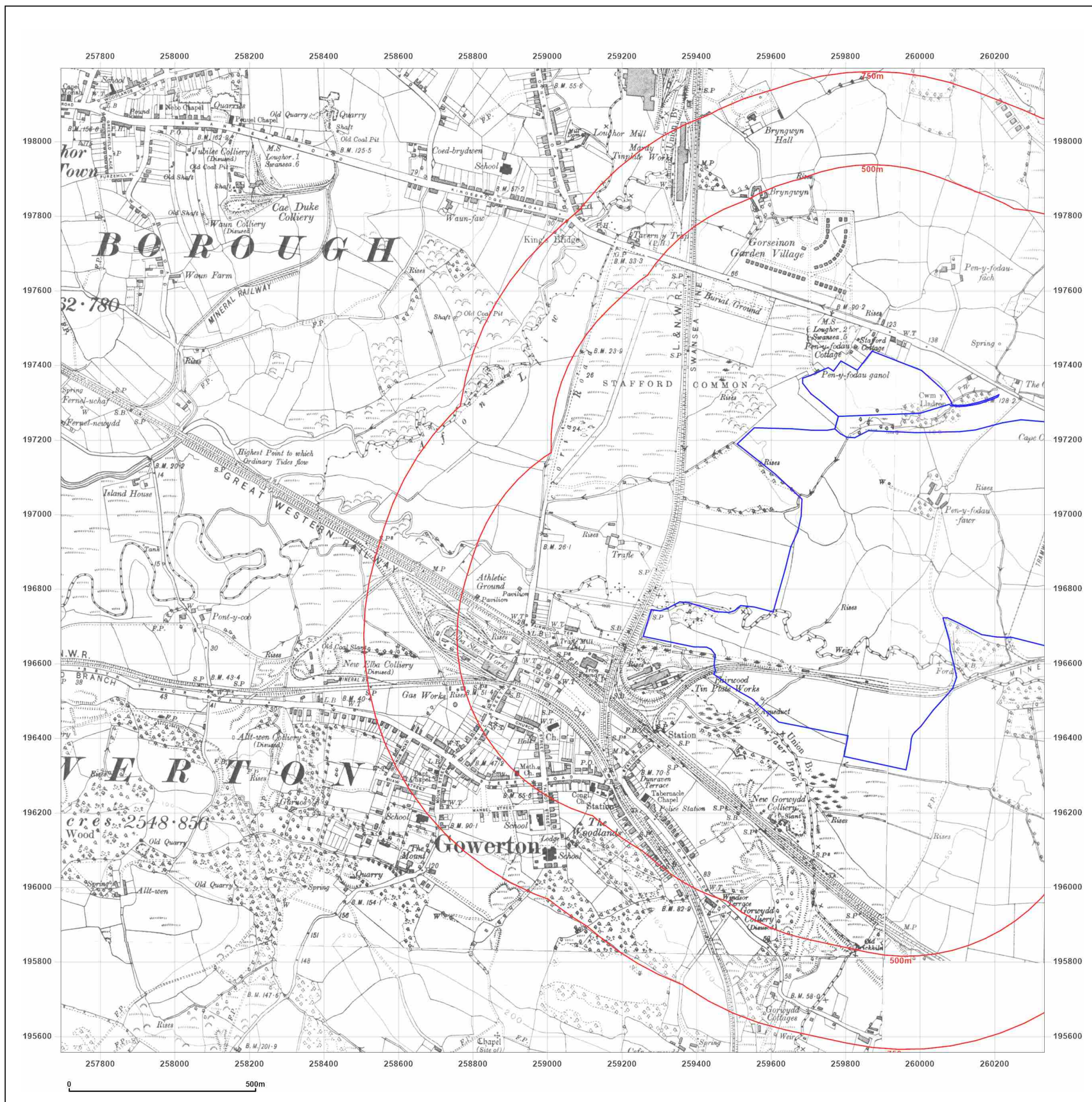


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Report Ref: HYG1-8369498_SS_1_1
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Map Name: County Series

Map date: 1913

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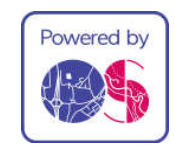
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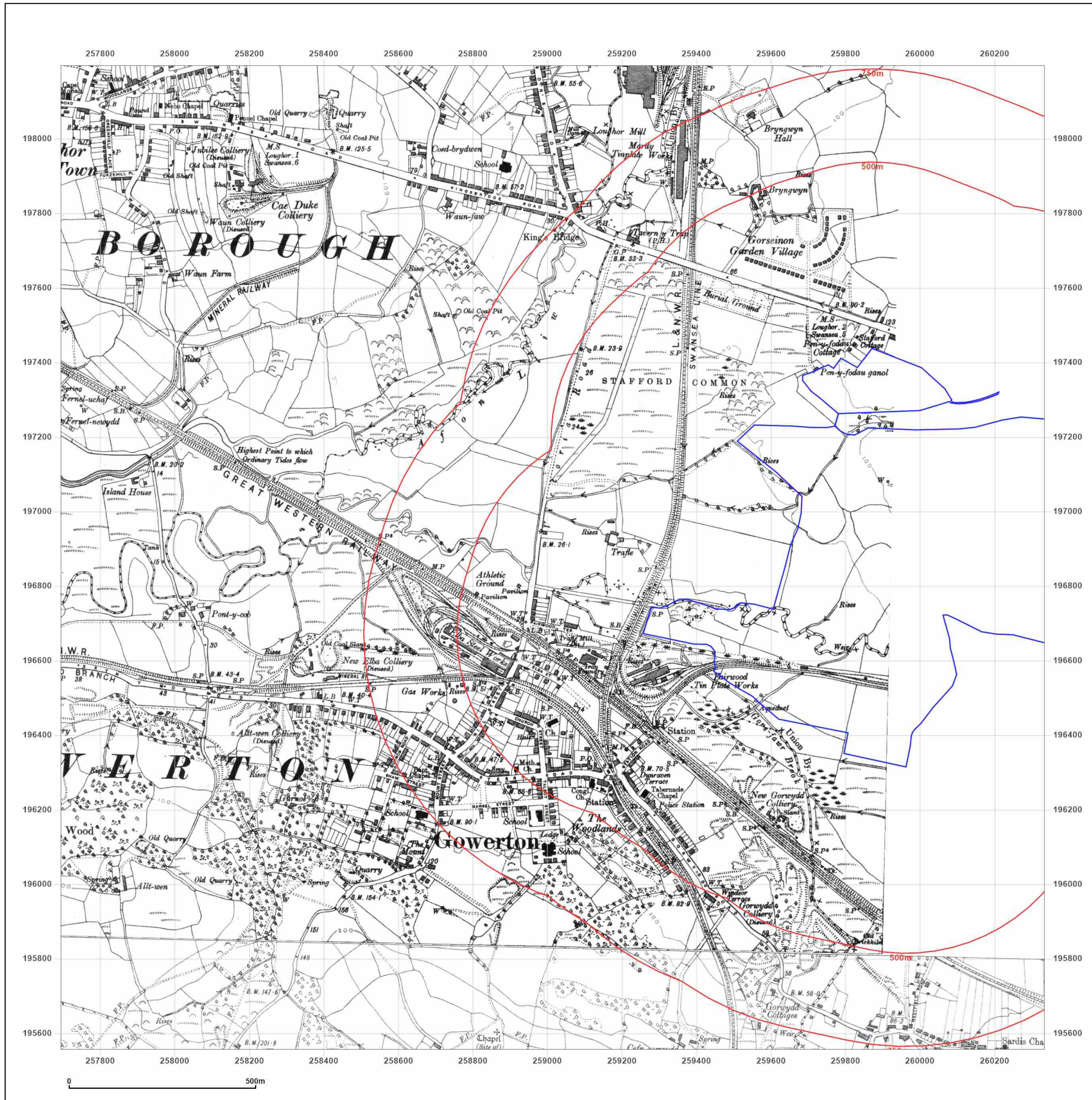
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Map Name: County Series

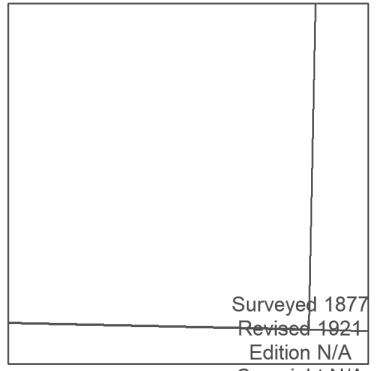
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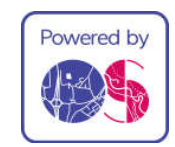
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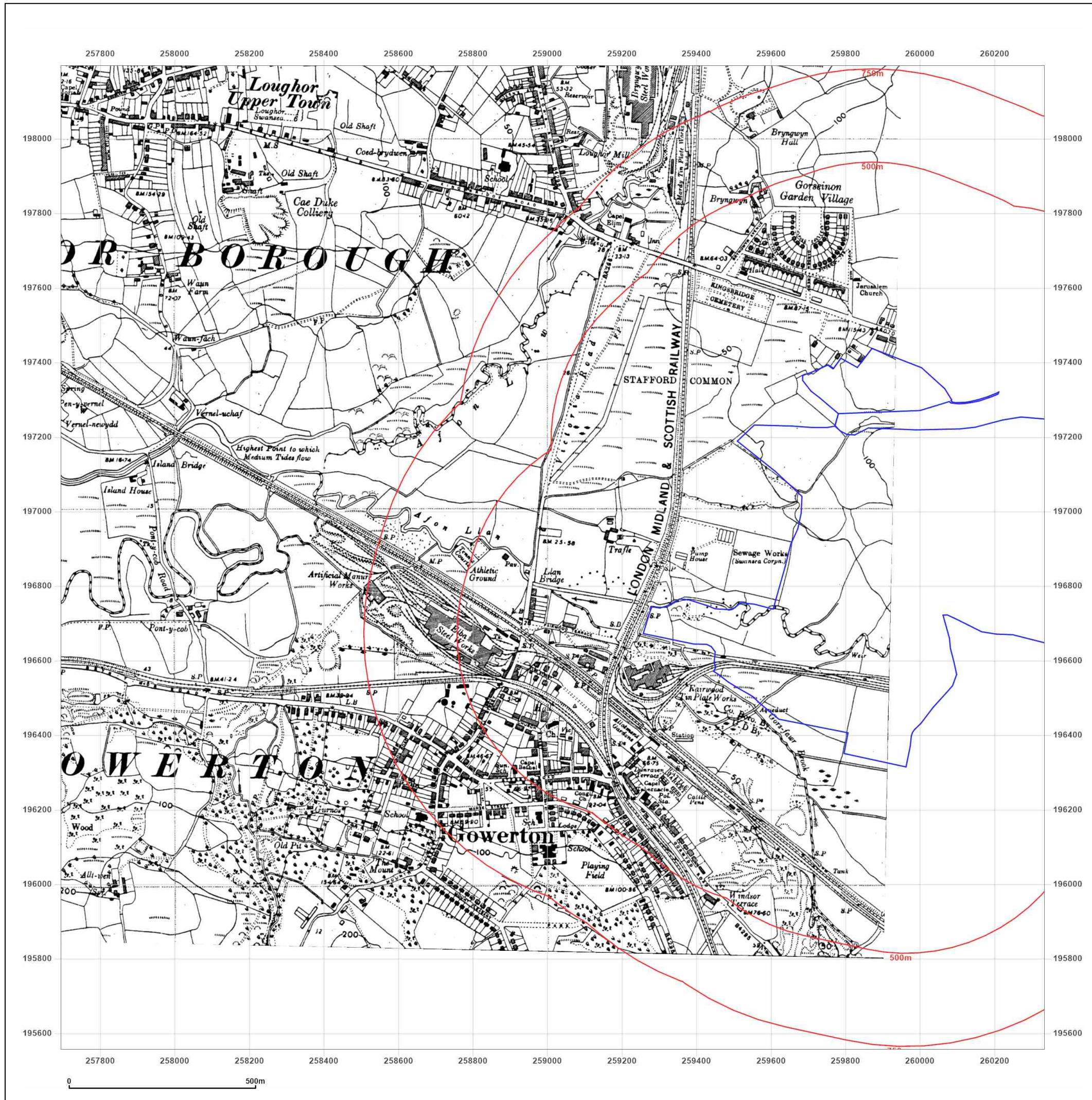
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Client Ref: PO-21-056
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Grid Ref: 259013, 196876

Map Name: County Series
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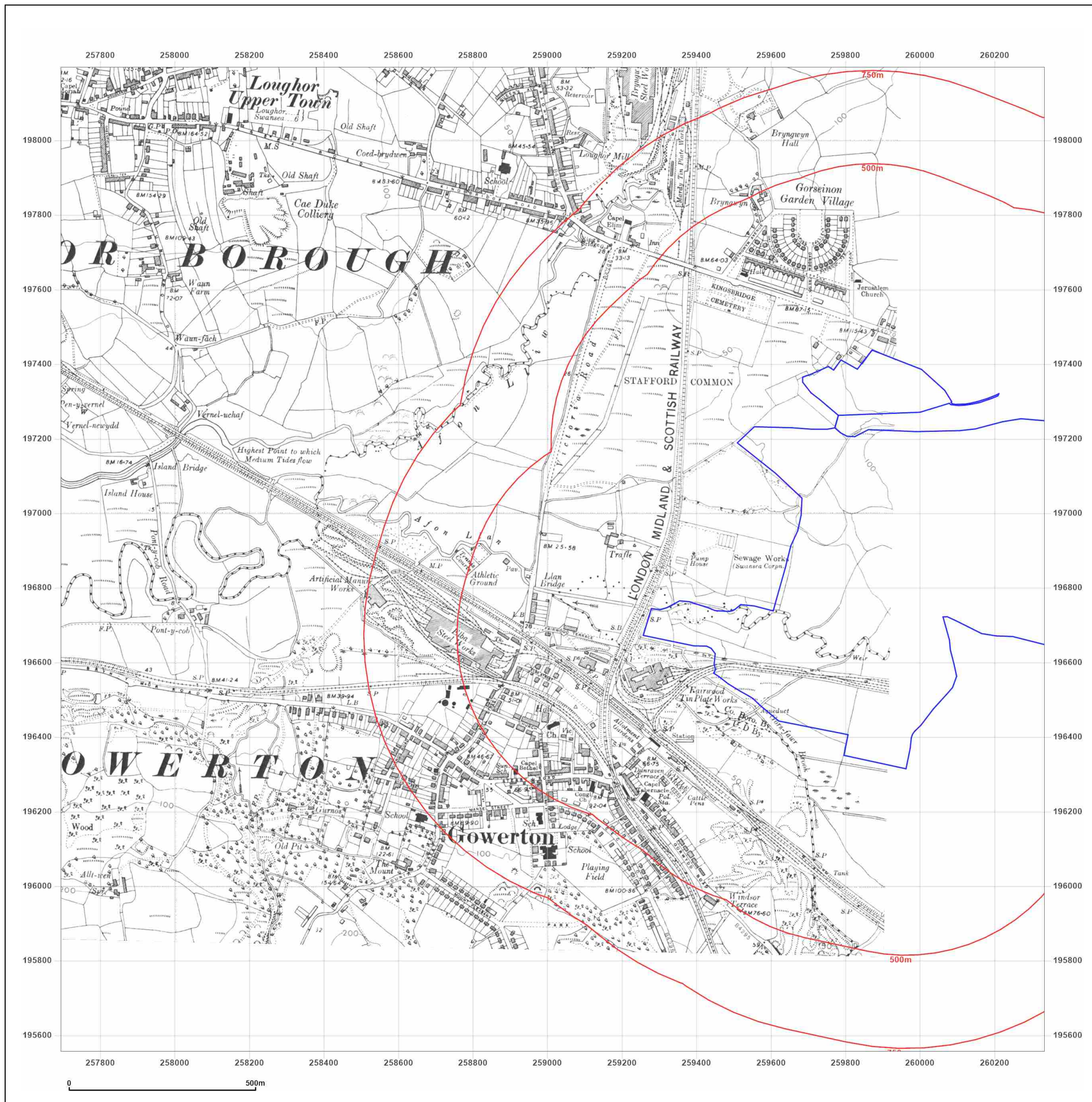
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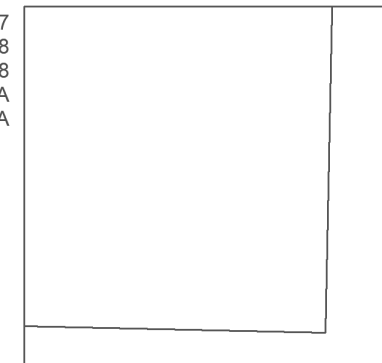
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Report Ref: HYG1-8369498_SS_1_1
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Map Name: County Series

Map date: 1936-1938

Scale: 1:10,560

Printed at: 1:10,560



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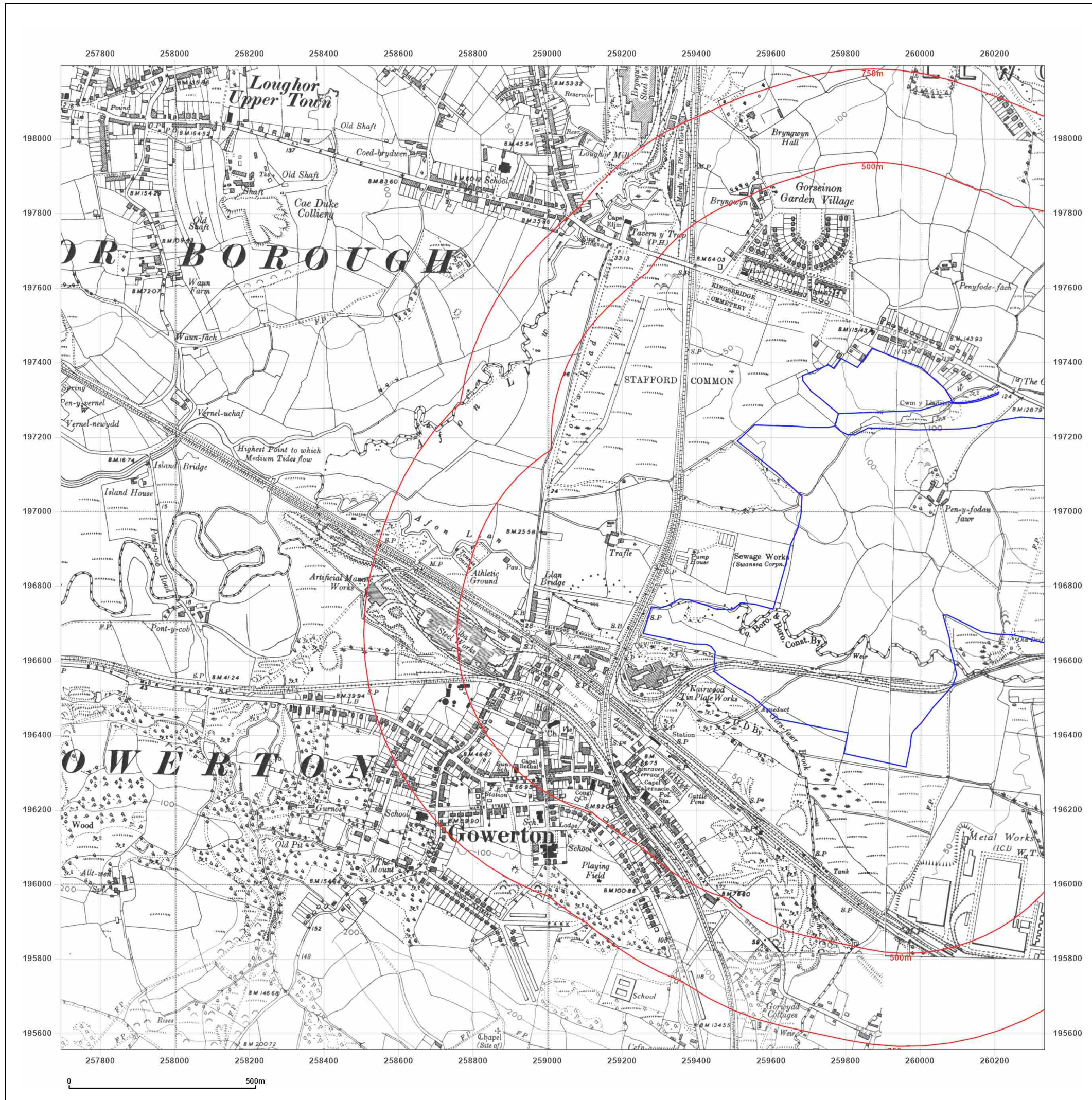
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Client Ref: PO-21-056
Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: County Series
Map date: 1947-1948
Scale: 1:10,560
Printed at: 1:10,560



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Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: Provisional

Map date: 1964

Scale: 1:10,560

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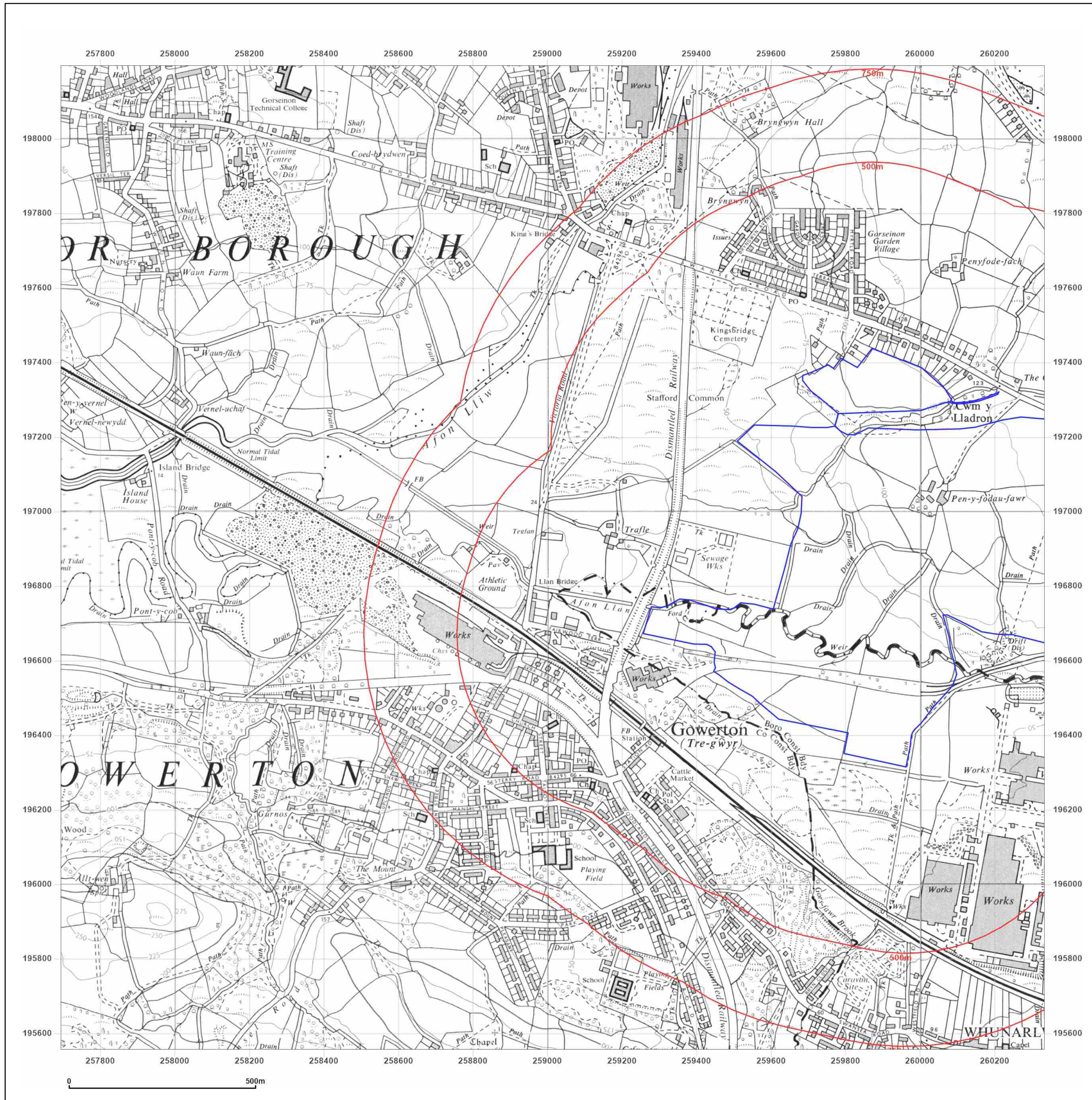
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Grid Ref: 259013, 196876

Map Name: Provisional

Map date: 1967-1968

Scale: 1:10,560

Printed at: 1:10,560



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Client Ref: PO-21-056
Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: National Grid

Map date: 1974

Scale: 1:10,000

Printed at: 1:10,000



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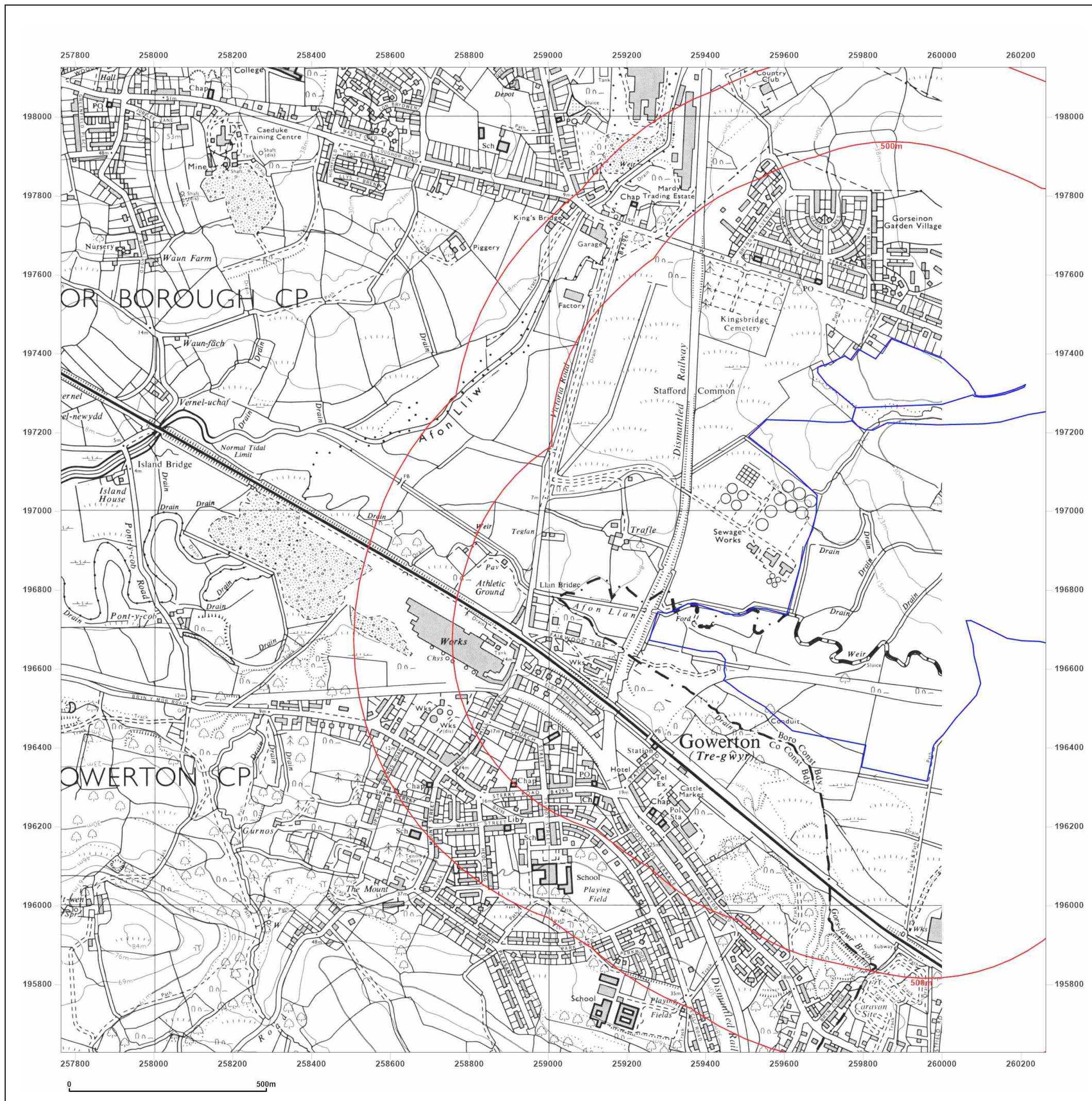
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Client Ref: PO-21-056
Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: National Grid

Map date: 1988

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1986
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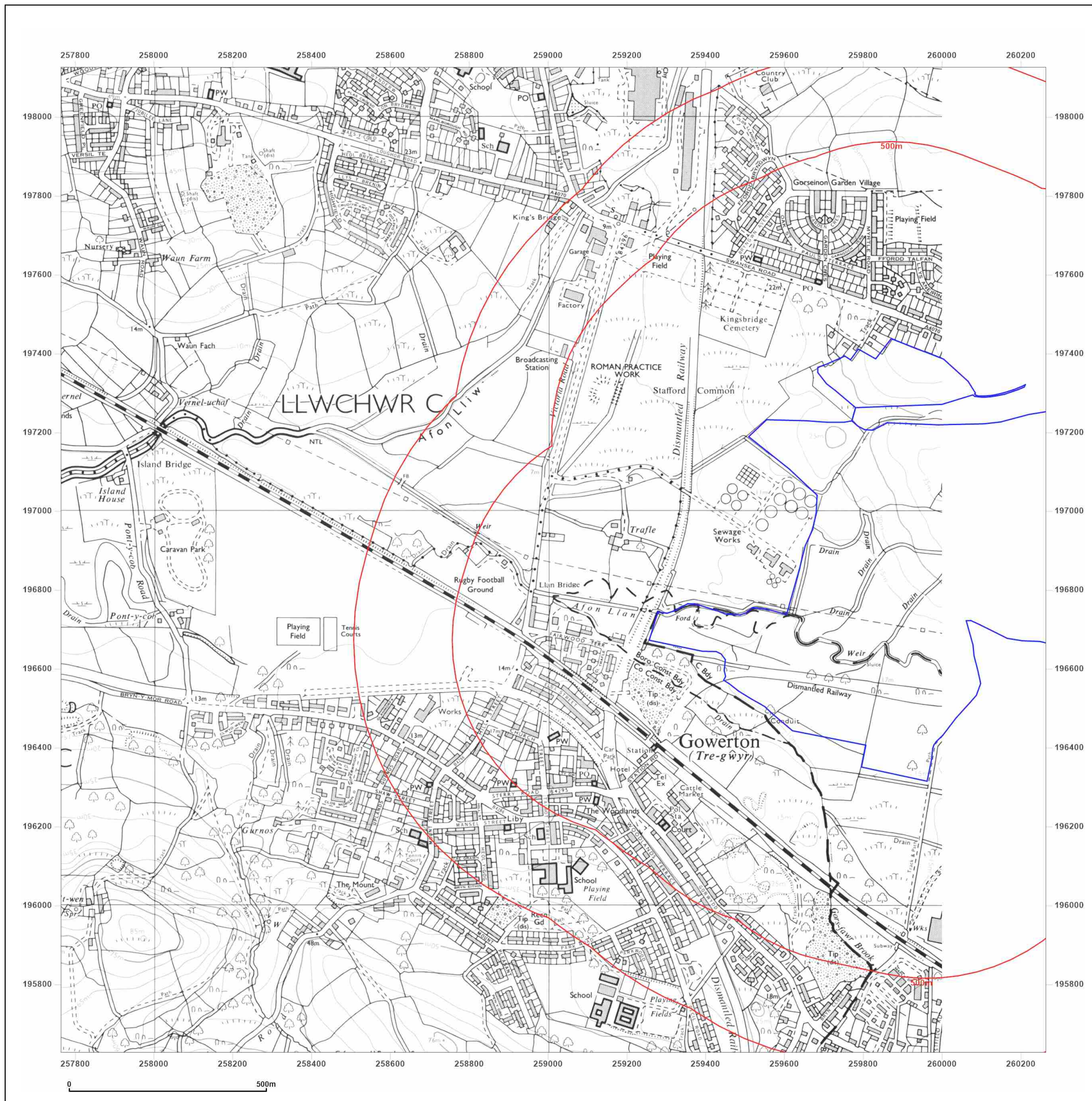
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Report Ref: HYG1-8369498_SS_1_1
Grid Ref: 259013, 196876

Map Name: National Grid

Map date: 1992-1994

Scale: 1:10,000

Printed at: 1:10,000



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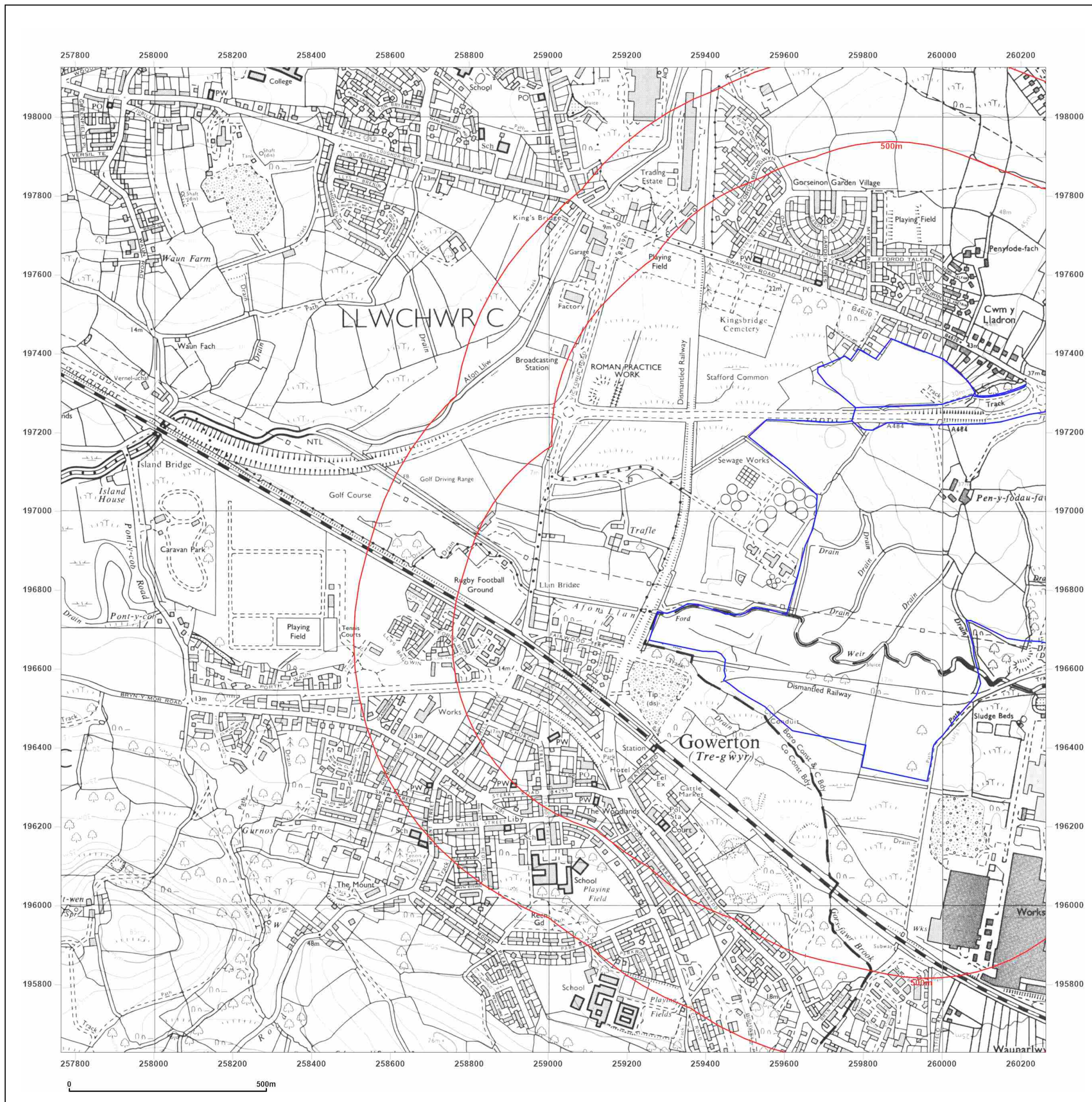
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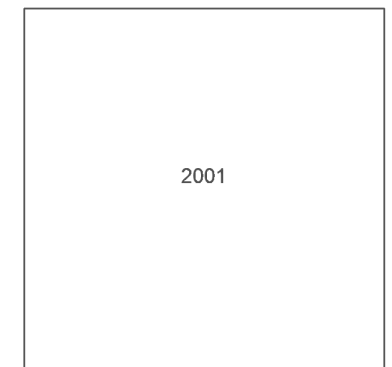
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Map date: 2001

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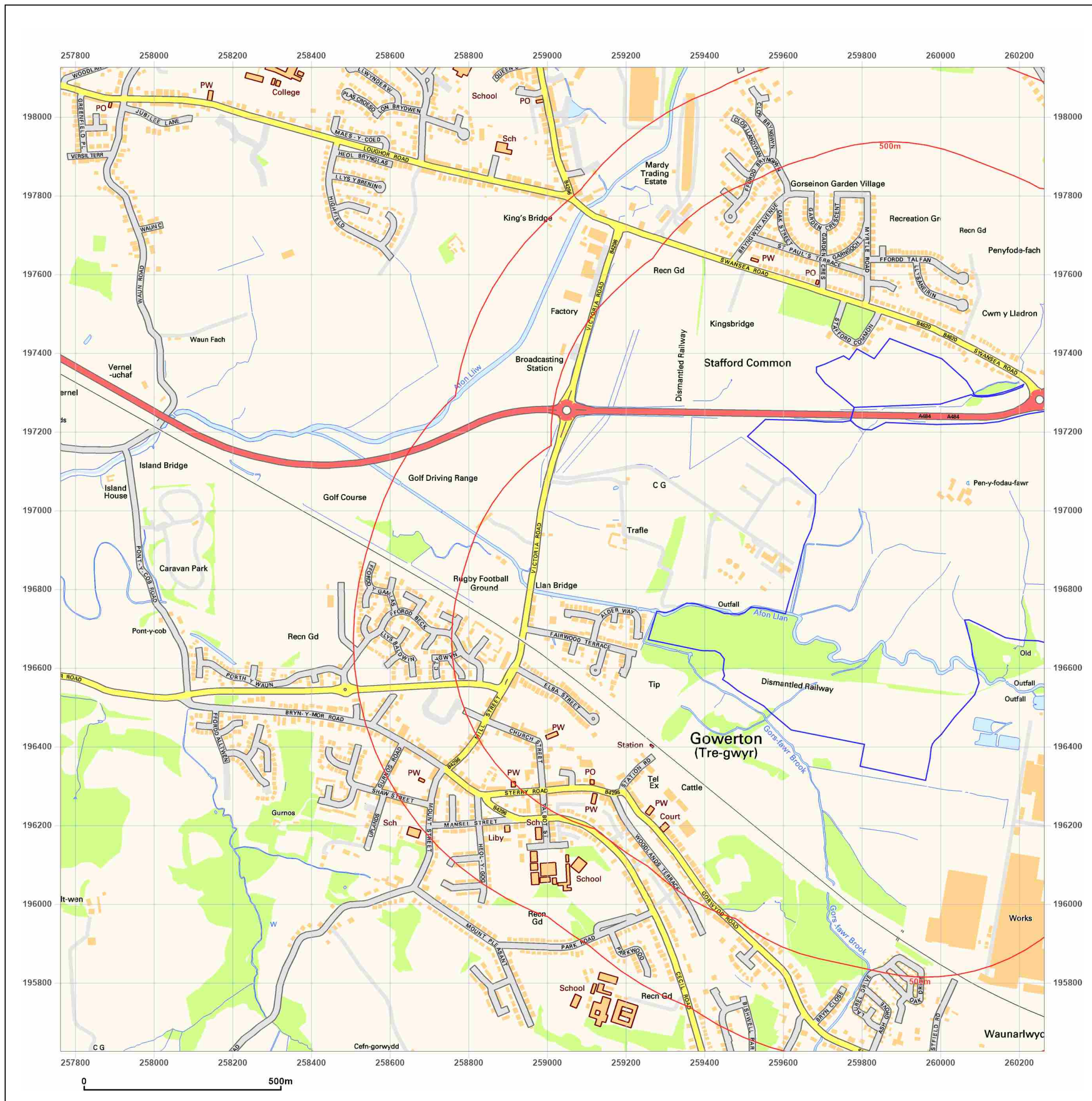
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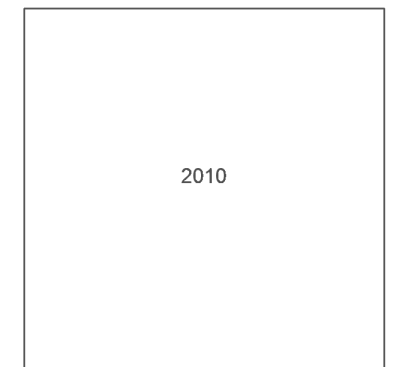
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Map Name: National Grid

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Printed at: 1:10,000



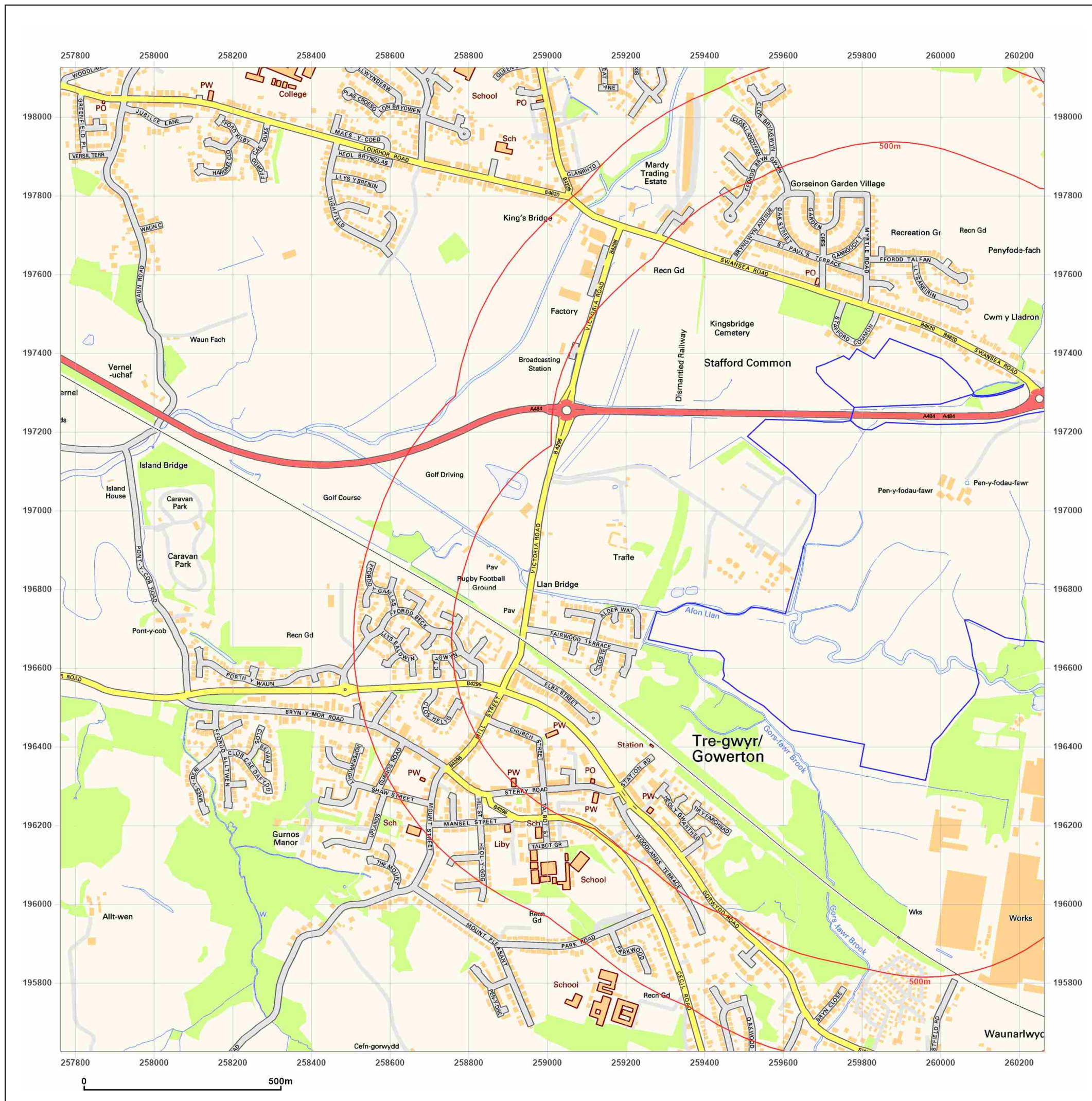
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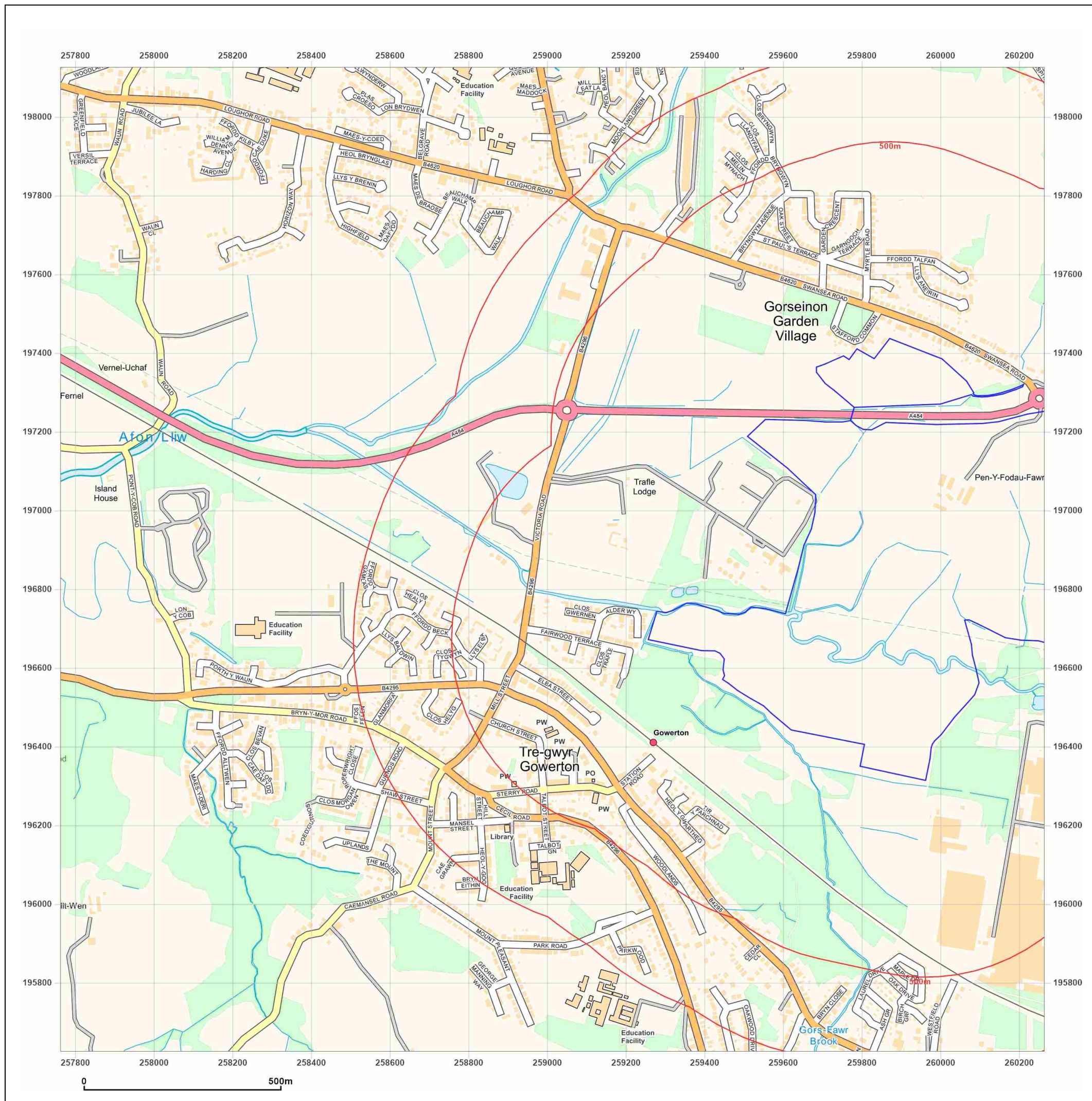
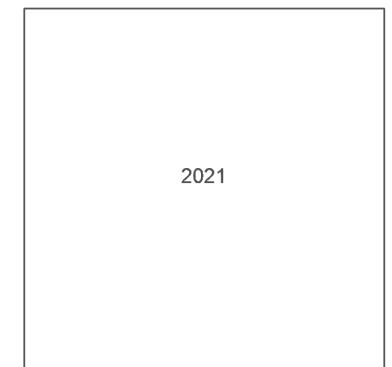
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Drawings

Drawing 1

Site Walkover Photo Location Plan

Gowerton Field Numbers



DRAWING 01 – Site Walkover Photo Location Plan

Site Walkover Photos and viewpoints as presented in Table 3-1 of the Hydrogeo CMRA & Phase I Report.

Project: Gowerton

Ref: HYG989

Date: 12 2022

Drawn By: SG

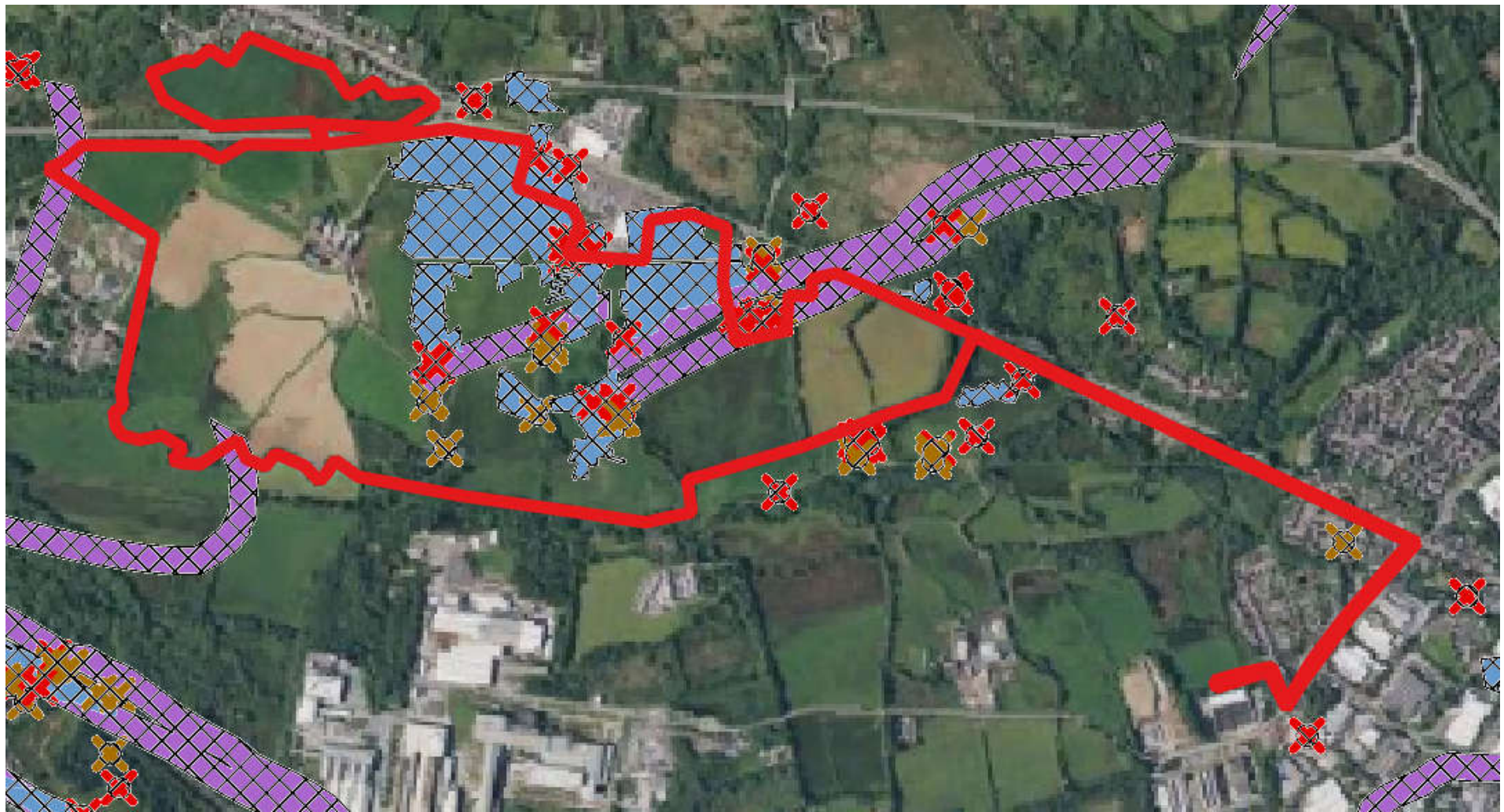
Checked: MW

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Telephone: 01873 856813 Email: mike@hydrogeo.co.uk Web: www.hydrogeo.co.uk

Drawing 2

Indicative Coal Mining Constraints



- Site Boundary**
- Shallow Coal Mine Workings**
- Coal Outcrop**
- Development High Risk Area**



DRAWING 2 – Indicative Coal Mining Constraints

Contains Coal Authority Materials.

Project: Gowerton

Ref: HYG989

Date: 12 2023

Drawn By: SG

Checked: MW

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Drawing 3

Indicative Past Land Use Constraints



Site Outline

Search buffers in metres (m)

-  Historical industrial land uses
-  Historical tanks
-  Historical energy features
-  Historical garages

DRAWING 3 – Extract of past Land Use Map from Groundsure Report

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Project: HYG989 Gowerton

Ref: HYG989 D2 221202

Date: 12 2022

Drawn By: SG

Checked: MW

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